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Private security officers on Hot Spot Patrol

A mixed method multiple case study

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Abstract

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Aims and objectives: This thesis aimed to gain knowledge of the extent private security officers patrolling public spaces 'work'. By considering the conditions the private security officers are intended to address, stipulated by their customers and regulatory institution, I approach the research question permeating my thesis: Why is the intervention implemented and to what extent does it work? This is further deconstructed and defined as two separate but related inquiries: (i) what are the problems the private security officers are supposed to remedy? (ii) to what extent are they remedied?

Method and data: To address the research question posed, I adopted a mixed method design, tailored to engage the two parts of the examination sequentially. Initially, I conducted a qualitative content analysis considering what the problems were and how they were represented within documents containing the municipal's application of permit and the police authority's basis of approval. This laid the foundation of my quantitative effect study. I applied one of the strongest quasi-experimental methods in terms of validity: the interrupted time series design, to consider the second part of my examination. These approaches were applied to two separate but similar cases, in effect, adopting a multiple-case methodology using a literal replication logic.

Results: This thesis shows that the problems the private security officers patrolling public spaces are intended to remedy are: high levels of criminal activity, the public's fears and worries, and disturbances to order, with a premium on criminal activity. More importantly, the results indicate that it is by primarily reducing criminal activity, the other problems are addressed. This positions the intervention within the 'Hot spot policing' paradigm. As such, my effect study considered exclusively if significant reductions in crime were attained during the interventions of the four most pressing crime types. Only one case showed significant reductions in crime, but only in two models. These models could not account for the effect of the Covid – 19 pandemic and one had issues with multicollinearity, questioning the validity of the results. Two interpretations are suggested: either characteristics of place matter when

devising a hot-spot policing intervention using private security or the intervention is ineffective in reducing crime. The results and both interpretations are discussed and recommendations for future studies are suggested.

Keywords: Criminal Justice, Criminology, Evidence-Based Policing, Hot spot policing, Private Security, Ordningsvakter, Sweden, Gothenburg, Mixed Method, Multiple Case.

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Introduction

In recent years, the need and presence to maintain public order with the use of private security officers have increased in our communities (Hansen-Löfstrand 2021b; Brå n.d). In 2021, the Swedish security industry comprised 1 441 private companies with a total revenue of more than 90 billion Swedish Crowns, with 47 000 people in employ (Unika Siffror Från Kartläggning Av Säkerhetsbranschen, 2021). Of these, private security officers represented about 23 000, which was about 2 000 more than the number of police officers in the country (Hansen-Löfstrand 2021b). In late 2021, there were about 500 different public and semi-public areas in Sweden where private security officers entrusted with powers, usually only entrusted to police officers, were appointed to patrol to maintain public order (Polisen, 2021a;b;c;d;e;f;g). The current legal framework which made this ‘community level marketization in policing’ (Hansen-Löfstrand 2021a) possible, states that these public spaces in which private security officers are conducting patrol are exceptions to the norm, and should only be appointed in special cases (SFS 1980:758). However, in 2019 the government launched an investigation into the appropriateness of the framework in its adaptiveness to the current political landscape of criminal policy. The authors suggested that a new law should be considered which would go into effect on the first of June 2023 and replace the former (SOU 2021:38:25). Among other things, this legal framework would provide more powers to the private security officers and ease the process to appoint them to patrol public spaces, literally removing the exception to the norm (SOU:2021:38).

Despite this growing private market into the public domain of community policing, proper effect evaluations considering if private security officers succeed in maintaining public order are absurdly scarce. To my knowledge, there are only two published, proper effect evaluations (see Frogner et al 2013; Jonsson 2019). None of which provided any significant result.

In light of the slim body of research, in conjunction with the upward trend of policing marketization, I contend that a quantitative approach considering the effects on the conditions the private security officers patrolling public spaces are intended to address would provide a much-needed evidential basis. An examination such as this will have a lot of value for Swedish criminal policy concerning the marketization of policing.

Aim, Research questions and Objectives

This thesis aims to gain knowledge of the extent private security officers patrolling public spaces ‘work’. A prerequisite for such an inquiry is, naturally, a consideration of the conditions

that work is tailored to address, i.e., why is the intervention implemented in the first place? As such, the research question that permeates this thesis is as follows:

- Why is the intervention implemented and to what extent does it work?

The dual nature of this research question demands a sequential approach and consequently a decomposition into two separate but related inquiries:

- What problems are patrolling private security officers supposed to remedy?
- To what extent does the intervention work?

These inquiries position this thesis within a ‘Program Evaluation Framework’ in which the effects of the intervention are considered on the conditions it is intended to address (Lum & Koper, 2017:23). To appropriately consider these inquiries, I will need to adopt a mixed method design, applied sequentially (see Clark & Ivankova, 2016). That is, initially the first question will be approached with a qualitative method, the results of which provide the foundation of the second question, which will be considered quantitatively.

The disposition of this thesis will mirror its framework and design. In the last section of this chapter, the legal framework and the state of private security in Sweden will be addressed, which will be followed by a review of the previous evaluations of private security officers patrolling public places and other research pertaining to its implementation. This will be followed by the theoretical points of departure of this thesis. Then, the design, methods, and material will be considered in relation to the two approaches applied, which will be followed by the results and lastly the concluding remarks and the discussion thereof.

The legal framework and the state of private security in Sweden

Officially, the Government’s position that police officers never should be replaced by private security officers has never faltered, and attempts to loosen up the legislative framework in favour of private security have historically been met by opposition and criticism, irrespective of the then-current political composition of government (Hansen Ljöfstrand 2021a: 903-905). However, over the last decade - as a consequence of a perceived deterioration of national security, and an inability of the police authority to visibly sate the need for community-level police patrols, coupled with increased lobbyism from the security industry - Sweden’s otherwise state-centred paradigm has allowed a fairly rapid expanse of the private security market into the public domain of community policing (Hansen Ljöfstrand, 2021a).

The legal framework that this ‘community-level marketization’ (Hansen Ljöfstrand, 2021a:209) of policing derives from, albeit unintentionally, is the Act on Private Security

Officers (SFS 1980:578). It states that private security officers may be appointed to serve at “general gatherings” - defined as “gatherings at which the freedom of assembly is exercised (SFS 1993:1617: ch.2:§1) -, circus performances, public events - defined as “other events that are not to be regarded as public gatherings or circus performances” - (SFS 1993:1617:ch.2:§3), areas of recreation in which the public has access to, spaces that serve alcoholic beverages, security checks at the courts, at public meetings, and probation offices (SFS 1980:758). The addition of Paragraph 3 of the “Act on Private Security Officers” (hereafter referred to as §3), in 2001, allowed even more spaces to be the subject of security monitoring by private security officers. It states that¹:

“If there is a particular need and it is of significant importance for the public’s interests, security officers may also be appointed in other cases than those specified [in previous sections] ...” (SFS 1980:758: §3)

This rather obtuse regulation, which Hansen-Löfstrand (2021a) calls an ‘institutional void’, has given rise to the phenomenon of ‘Paragraph 3 Areas’ – delineated public spaces in which private security officers are appointed to patrol in the stead of police officers. These spaces usually concern city centres or squares in which a permit is granted by the police authority, after a petition pertaining to the needs in accordance with the ‘Act on private security officers’, is provided by the municipalities on the behalf of private security officers. That is, the municipalities apply to hire private security companies in these delimited geographical areas, and the police authority grants these security companies and officers permits, if and only if, ‘there is a particular need and is of significant importance for the public’s interests’.

As of writing this thesis, there are 500 appointed areas in Sweden and 66 in the greater city of Gothenburg alone (Polisen, 2021a;b;c;d;e;f;g). Sweden and Finland are the two only countries within the EU that grant private security officers authority to act in place of police officers, in reaction to disturbances to order. Sweden is however unique in granting private security officers mandates to patrol limited sections of public spaces (Jonsson, 2019:59-60), making §3 a fairly unique phenomenon to Sweden.

Now, there are three different types of private security officers in Sweden, which all have somewhat different powers and responsibilities (see Hansen Löfstrand 2021b). Type 2 (ordningsvakter) is the type that is appointed to patrol public places within the confines of §3 and is as such of sole interest to this thesis. As such, the other two will not be covered in this

¹ This is my translation of the current formulation of the section which was updated in 2021

section.

Type 2 officers, hereafter referred to as Private Security Officers (PSOs), differ from type 1 and type 3 officers in that the Police Authority is responsible for the appointing, training, authorization, and control of the PSOs even though they are in the employ of security companies. This means that PSOs report to the police authority, need to obey the orders of police officers on duty, and need to make the police authority aware of their activities pertaining to their interests (SFS 1980:578). In essence, PSOs assist the police in maintaining public order (SFS 1980:578: §1) and are as such appointed supplementary to police officers. Apart from general civic rights in the use of force, PSOs are entrusted with additional powers otherwise only entrusted to the police. These regard the use of force - with raw strength, batons, or handcuffs - when detaining or removing an individual from an area, but only if the individual resists (Sehlin, 2018:5,57). In addition, when detaining an individual, the detainee should swiftly be handed over to the nearest police officer on duty (Sehlin, 2018:60). As such, the PSOs do not have the lawful power to transport the detainee to a police station for instance (see SOU, 2021:38). As a general prescript, however, PSOs should not use stricter means than the necessity of the situation demands and should primarily seek redress through information and exhortation (SFS 1980:578).

The literature review

As previously mentioned, according to the first section of the ‘Act on private security officers’, the main assignment of PSOs within the confines of §3 is to maintain public order. This chapter will start by reviewing the previous evaluations of §3 interventions to consider the basis on which my examination will emanate. After, the literature concerning the hot spot paradigm of crime prevention will be addressed to situate the intervention within a research context in an attempt to review the possibilities and conditions of success, which will be considered in this thesis.

Private security patrolling public spaces in Sweden

Rigorous studies considering why the intervention is implemented (i.e., what problems PSOs are set out to counter) and if the intervention is able to remedy them, are scarce. My inquiry has only identified six evaluations considering the effects of §3, and virtually then, considering the problems the intervention is supposed to remedy (Burcar & Wästerfors, 2007; Frogner et al., 2013; Berhardson & Sonander, 2017; Neuman, 2019; Jonsson, 2019; Bretzer, 2020). Four of these are publicized scientific evaluations – three of which I have direct access to - and the

rest are students' theses on the bachelor level². However, only two of the four publicized evaluations are proper effect evaluations, the other two considered effects in terms of qualitative approaches and descriptive statistics. Hence, in terms of effects, the results validity of the two latter evaluations are questionable and will not as such be reviewed in the following section.

Considering why the intervention is implemented, the sites PSOs were appointed to patrol within the confines of §3 were all situated within an urban context, and all had precedingly experienced high levels of crime and social disorder in conjunction with low levels of public perception of safety, i.e., the public did not feel safe within the area (Brucar & Wästerfors 2007 as cited in Jonsson, 2019:60-61; Frogner et al 2013; Jonsson 2019; Bretzer 2020). However, the focal crime types of the interventions differed in large respect to the difference in physical environmental characteristics of place and associated routine activities. Brucar & Wästerfors (2007 as cited in Jonsson, 2019:60-61) and Frogner and colleagues (2013) evaluated interventions were situated within town/city centres and concerned assaults and robberies, and violent street crime, respectively, during weekends in the evening/night. Similarly, Jonsson (2019) evaluated an intervention concerning an active central station during the weekend evenings/nights, in which the focal crime types were assault, drug crime, molestation (ofredande), threats, and vandalism. In contrast, Bretzer's (2020) evaluation concerned a site situated within an urban district of Gothenburg city, in which patrols were conducted during the early to late afternoons. The area of appointment circumvented a square, public health clinics, a grocery store, a warehouse, a parking lot, a liquor store, and a public 'green space'. The crime types concerned drug sales, threats, theft, assaults, fencing of goods, and shoplifting.

Considering if the intervention works, both Frogner and colleagues (2013) and Jonsson (2019) found no significant reductions in crime nor, in the case of Jonsson (2019), public perceptions of safety. Both evaluations suggested issues in implementation procedures as explanations for these insignificant results. Frogner and colleagues (2013) had no insight into the actual implementation procedures of the intervention, and could not determine if the PSOs were directing their patrol at the small street segments where most of the crime occurred, i.e., the hot spots of crime, and/or to what extent. On the other hand, Jonsson (2019) did have insight into the implementation procedures and found a range of issues in that regard, one being that

² Berhardson & Sonander 2017 conducted a descriptive statistical analysis and did not use a baseline estimation, which makes their results very tentative at best, and Neuman's 2019 abstract did not provide information enough to discern the analytical procedures, thus I will not review the results of these theses.

the patrols were not conducted directed and proactive, but rather reactive and aimless. These intercessions relate to the hot spot policing literature, particularly the tactic of directed patrol, which has been shown during the past three decades to be an effective paradigm of crime prevention (Braga et al 2019).

Hot spot policing

That crimes cluster in space generating specific ‘hot-spots’ of crime – i.e., an area which have higher than average occurrences of crime (Eck, 2005) – which are stable through time, is an all too well-known phenomenon within the literature of criminology (see Weisburd 2015: Braga et al 2017), and policing interventions focusing on specific hot-spots is a relatively well-studied subject (i.e., ‘Hot-spot policing’). However, there is no universal definition of how large or small an area must be, to be defined as a hot spot (Eck, 2005). Yet researchers tend to define it in terms of micro-places, such as a specific street address, or a cluster of street blocks, while police agencies tend to refer it to larger, administrable defined areas, such as neighbourhoods or police beats (Lum & Koper 2017:65). The overlap between these two ‘traditions’ is that within the larger hot spot sites there seems to be a fair amount of block-to-block variation in crime concentration (Lum & Koper., 2017:61).

Essentially, ‘Hot-spot policing’ refers to the initiative of allocating more resources to high crime sites and as such do not refer to a specific tactic implemented at these sites (Lum & Koper 2017:60). In terms of effects, Braga and colleagues (2019) have conducted a systematic review and meta-analysis of experimental and quasi-experimental hot-spot policing evaluations. Based on 78 interventions conducted in 9 different countries, of which 62 showed reductions in crime, they concluded that hot-spot policing has small but significant effects on violent, property, drug and disorder offences. The most common and basic tactic implemented is a heightened presence of police patrols and enforcement. Of these, ‘Directed patrol’ is one of the most common strategies implemented by police agencies within an American context (Koper 2014) and one of the first strategies devised within the hot-spot policing research (Sherman & Weisburd 1995: Koper 1995). Since, and based on Sherman & Weisburd’s (1995) study, as well as Koper’s (1995) later follow-up study, research has indicated that directing patrol on hot spot micro-places, with a ‘dosage’ of about 10 to 15 minutes presence at every spot, visited randomly and proactively provide crime reductions (Telep et al 2012; Rosenfeld et al., 2014; Ariel et al 2016; Williams & Coupe, 2017; see Lum and Koper 2017: 71-72).

In wide strokes, the hot-spot policing literature has focused on interventions carried out

by police officers within an American, urban “big city” context³ (Wiseburd & Telep 2014: see Braga et al 2019). For instance, in Sweden, studied hot-spot policing interventions carried out by police officers have not provided significant reductions in crime, regardless of city size (Brå, 2014; Gerell 2016). Conversely, within the context of private security and uniformed non-police officials, significant reductions in crime and victimizations have been shown within the UK (Ariel et al 2016; Ariel et al 2017). As such, in general terms, hot-spot policing has been widely demonstrated as an effective crime prevention paradigm, however, success is conditioned to a range of factors.

§3 as a Hot spot policing intervention

As the previous evaluations concerning §3 reviewed, entails remediation of high levels of crime and low levels of public perception of safety - and allocating policing resources to high crime sites to reduce criminal occurrences in attempts to increase public safety is conventionally defined as ‘Hot-spot policing’ (Lum & Koper,2017:60) - I construe the §-3 phenomenon, primarily, as an intervention of ‘Hot-spot policing’ within a private policing initiative (cf. Frogner et al., 2013). As such, there is reason to believe that the §3 phenomenon should be effective in reducing crime. Considering the reviewed hot-spot policing literature, and in particular that the studies conducted in Sweden are very few, the previous §3 effect evaluations were situated in small cities, i.e., a population size of less than 200 000, following Braga and colleagues (2019) definition. Hence, in addition to the suggested issues in process implementation, a reason for the insignificant results of Frogner and colleagues (2013) and Jonsson’s (2019) evaluations might be that they were situated in relatively small cities (see Brå 2011). As such, a §3 intervention situated within an urban context of a relatively large city might produce significant reductions in crime, which will be the target of my examination.

Theoretical points of departure

The literature review in conjunction with the results of the qualitative approach shows that the heart of the §3 intervention is crime reduction within crime hot spots. The theoretical points of departure of this thesis will as such draw from the theoretical underpinnings (i.e, the mechanism of crime prevention) of such focused hot-spot policing approaches. Specifically, I will apply Nagin, Solow and Lum’s (2015) theoretically integrated deterrence-based model,

³ In Braga and colleagues (2019) review study, 80 percent of the studies included were situated in either middled sized cities (a population size between 200 000 – 500 000) or large (more than 500 000).

which provides a theoretical foundation for the effectiveness of focused hot-spot policing (see Braga et al 2019).

The model is an integration of the scientific literature concerning deterrence, policing, and the three main theories within the situational crime prevention paradigm (Nagin et al 2015; see Smith & Clarke, 2012). As such, hot spots of crime are seen as consequences of three criminogenic elements, i.e., elements that generate crime, on the sites: (i) there is a natural convergence of people's routine activities (e.g., a transportation juncture), (ii) where the physical characteristics of place are attractive for a criminal occurrence (e.g., low visibility), (iii) low levels of capable guardianship to impede a criminal occurrence (e.g., low levels of security monitoring). As such, the situational characteristics of such places generate a lot of opportunities for crime, opportunities that a rational and motivated actor will seize. Targeted policing interventions then engage the element of capable guardianship and opportunity reduction through functions of Deterrence (Nagin et al 2015).

In a nutshell, the model centres around one power, and one role of police officers: the power of 'apprehension' and the role as 'sentinels', or in terms of Cohen and Felson's (1979) 'Routine activity approach', as 'capable guardians'⁴. Through their role as sentinels, police officers deter crime by increasing the perception of risk that a crime will not be performed successfully, and as such will not result in the desired outcome – regardless if that outcome is material or emotional. In addition, the risk of being apprehended and later sanctioned increases. As such, the power of apprehension imbues the role of sentinel with an additional function of deterrence. However, the act of apprehension has no direct function of deterrence in itself. Apprehension is seen as a reactive measure to an already committed crime, as such it is not an act of deterrence. However, it has the potential consequence of deterring future acts, both from the apprehended individual and other people to whom the apprehension became known.

The underlying assumption or axiom of this model - and this thesis - posits that all people are rational agents. As such, a criminal act is a consequence of a deliberate cost/benefits analysis where the potential benefits outweigh the potential costs (Nagin et al 2015: see Clark & Cornish 1985). This does not mean that a criminal act is the most ideal optimal act of that situation, instead, rationality is seen as bound to the individual, the physical environment, and the social situation (Nagin et al 2015: see Smith & Clark 2012). This means that the individual makes the most rational choice that he could make based on his physiological and

⁴ As potentially anyone may be a capable guardian within a situation, the term sentinel highlights the role police officers have as crime fighters, i.e., they have disposition, mandate, and incentive to intervene in any situation with a "criminal" characteristic.

psychological responses to a situation. Consequently, increasing the probability that a crime will be disrupted and the risk of being apprehended will not deter every potential offender. It will, however, deter most potential offenders. As such, the rational choice perspective and its principle of general rationality is a pragmatic stipulation used to create a ‘good enough’ predictive model (Smith & Clark 2012: see Clark & Cornish 1985)

Now, PSOs are not police officers as such. However, within the confines of §3, they are granted powers to detain individuals at the site, and use force, if necessary, until the arrival of police officers, which then may apprehend the individual. Hence, they have the power of apprehension by proxy. As such, PSOs on hot spot patrol should fulfil the same role as sentinels and thus the functions of opportunity reduction through deterrence. Consequently, the hypothesis of this thesis is as follows:

H₁: There will be a significant and lasting reduction in criminal occurrences during the §3 intervention.

Design, Material, and Methods

The research question of this thesis inquires why the §3-intervention is implemented (i.e., what are the problems the PSOs are supposed to remedy) and to what extent it works. As the introductory section has shown, the breach of public order is further broken down into high levels of crime and conversely, into low levels of public perceptions of safety. However, as the specifics of these two concepts vary between cases and as such locality, there is a need to consider this thesis inquiry in relation to specific cases. Consequently, for this thesis I have adopted a mixed method design, approaching the research question in an exploratory sequential manner. That is, I have conducted an initial qualitative analysis considering what the problems the PSOs are supposed to remedy were, for a specific §3-area. The results of that analysis provided the basis for a quantitative analysis examining to what extent the PSOs were able to remedy those problems (i.e., ‘work’). Studying one case has inherent issues in terms of generalizability, that is, it is difficult to claim that the results are representative of all cases. As such, I chose to conduct my examination on two cases, in effect, applying a literal replication logic, i.e., examining if the results in one case may be replicated in another theoretically similar case (Yin 2017:54-60). The benefits of such an approach lie primarily within the power of one’s conclusions and discussions (see Yin 2017:63).

As the methods applied within my mixed method design are tailored to engage one research question each, and they are implemented sequentially, the disposition of this chapter

will follow the same sequential pattern. That is, initially, the material and method of analysis of the qualitative approach will be considered, and lastly, the quantitative approach.

Sampling: the cases of §3

In the previously reviewed effect evaluations regarding §3, the areas of appointment in question, were both situated within small cities, in relation to Braga and colleagues (2019) definition. What is lacking in the scientific literature on the subject, is a study considering a §3 area within the central parts of a large city. As the literature review showed that there exists a big city bias within the hot spot literature, studying cases situated within a large city, i.e., 500 000 or more inhabitants following Bragas and colleagues (2019) definition, should provide a higher potential for success. The point of departure then in finding appropriate cases derives from a purposive sampling rationale. There are only two cities within Sweden which fulfil this condition, Stockholm and Gothenburg. As I am a native of Gothenburg and have been most of my life, I am a lot more familiar with its areas and their characteristics. As the physical characteristics of place are theoretically important for opportunity generation of crime, it made

Case 1: Area of appointment.



Areas of depiction: Brunnsparken in the bottom right corner, Gustav Adolfs Torg and Kronhuset in the middle left, and Kanaltorget in the upper part of the figure. The two nodes connecting the three areas are situated on the sidewalks of Östra Hamngatan. (Source: Permit of §3a).

a lot of sense to choose cases that fit the purpose but at the same time, that I am well acquainted with, even if it brought a hint of convenience sampling to my approach. Another condition was naturally, that the area should concern a public site, i.e., a city centre or square. These requirements left me with a sample frame of 4 potential cases (see Polisen, 2021a) which I chose two.

Case 1 poses an interesting case as it took a few applications and appeals from the municipality over a few years to acquire a permit from the police authority (Olausson, 2018; Adam, 2019; Sprangers, 2020). Initially, the police authority did not deem that there was an essential need of maintaining public order (Olausson, 2018) in addition to that the police already had a high presence within the area (Adam, 2019). After some deliberation, the permit was granted in a time frame of one year (Sprangers 2020). The permit took effect on the 30:th of June 2020 and was in effect until the 29:th of June 2021. Later, the municipality was granted a renewed permit spanning 3 years (Polisen, 2021a). As such, one may presume that the intervention could be deemed successful, and consequently, an interesting case to consider.

The area of appointment concerned four areas: Brunnsparken, Gustav Adolfs Torg, Kronhuset and Kanaltorget (see figure 1). The permit does not state to what extent PSOs are granted to patrol (i.e., what days of the week and time of day) but the municipal application asks for at all times, on all of the days of the week, which I presume is what is granted. The area of appointment covers an area of about 68 824 square meters (see appendix A), is situated within the central inner city of Gothenburg and contains one of the city's largest junctures in regards to public transport, and has a large number of businesses, stores, and restaurants in connection to it. Hence, there is a large number of people in the area at most times of the day.

When deciding on the second case, I did not want it to be located within too close proximity to the first, and as such too similar to the first case. This removed two of the remaining three cases – just a few meters apart. This left me with Case 2. On the 17:th of February 2021, the city of Gothenburg's application of permit in accordance with the act of private security officers was approved. It went into effect on the same date and was in effect until the 16:th February 2022. The permit covered an area of about 119 732 square meters (see appendix), and the included streets were Olof Palmes Plats, Järntorget, Linnégatan, Första Långgatan, Andra Långgatan, Tredje långgatan, Fjärdelånggatan, and Masthuggstorget (see figure 2). As in the first case, there is nothing stated in the permit in relation to the extent PSOs are granted to patrol. Similarly, the municipal's application of permit asks for a permit at all times of the day, all the days of the week, in teams of at least two PSOs on every occasion of patrol, which is what I presume is what is granted. The characteristics of this area contain

Case 2: Area of Appointment.



Main areas/streets of depiction: Första Långgatan follows alongside the upper red line (edge of appointment), Andra Långgatan is running horizontally in the upper middle, Tredje Långgatan in the lower middle, Fjärde Långgatan alongside the lower red line, and a small part of Linnégatan running alongside the vertical red line on the right. Olof palmes plats and Järntorget is situated to the right outside of the attached image and Masthuggstorget is situated to the left outside of the attached image (Source: Permit of §3b)

junctures of public transport, a large number of bars and restaurants, and other leisure and nightlife activities. As such, it is a fairly active place most of the time of the day and night. The characteristics also bear some similarities to the area in Frogner et al (2013) evaluation, which made it an interesting case from the perspective of the scientific literature.

Apart from the differences in activities associated with the Cases already mentioned, Case 1 is more dispersedly distributed and covers an area twice as small as Case 2 (see appendix). In addition, the buildings of Case 2 are more densely built up than Case 1.

The Qualitative Approach

As the first inquiry of my thesis concerns the problems the PSOs are supposed to remedy, I will let this inquiry be guided by Biacchi's (2009,2012) 'What's the problem represented to be' (WPR) approach. The central notion in her approach posits that what constitutes the

characteristics of a problem can be inferred from what we say about a specific problem and how it should be solved (Bacchi, 2012). As such, it offers a window into the assumptions behind the representations (Bacchi, 2012). The central concept then is “problem representation” which is the specific problematized phenomenon within a given context. To delineate this concept Bacchi’s (2009) WPR approach follows a set of six questions: (1) What’s the problem represented to be (2) What presupposition underlies this representation of the problem (3) How has this representation of the problem come about (4) What is left unproblematic (5) What effects are produced (6) How/Where is this representation of the problem produced, disseminated and defended.

Considering that the act on private security officers states that the main assignment of PSOs is to maintain or enforce public order when there is a breach in public order, and the introductory section has shown that this breach in public order is conceived in a joint venture by the customers of the intervention (the municipalities) and the regulating institution of the PSOs (the police authority). In other terms, the municipalities suggest that there exists a breach in public order (a problem) by applying for a permit in accordance with §3 (a problem representation), and the police authority (dis)confirms it with a basis of approval (a problem representation), Bacchi’s (2009,2012) toolbox is rather appropriate in consideration.

I do not intend to use Bacchi’s whole set of inquiries, as all of these are not relevant to my research question. I will employ Bacchi’s first and second inquiries. That is, ‘what’s the problem represented to be’- which functions to simply identify the problem, i.e., which problems are mentioned and to what extent (Bacchi 2009:2-3) and ‘what presupposition underlies this representation of the problem’. The latter, I employ to apprise the implicit conditions (i.e., the presuppositions) that the representations rest, in effect apprising how the intervention is represented to work. This is important to consider when examining if it works, which is the function of my second research question.

Material: Applications and Permits

As there are primarily two actors concerned in the realization of a §3 intervention (i.e., the municipality and the police authority), both representations by these two actors need to be considered jointly and the material used needs to represent these two sides. As such, the material I chose was the municipality’s permit application of §3 and the police authority’s basis of approval (the permit) with respect to the two cases.

To acquire these documents, I contacted the legal department of the police authority of Gothenburg City, which provided me with access after a few bureaucratic loops. The

documents concerning the permit and the basis of approval thereof were fairly short and extended to three (Case 1) and four (Case 2) pages. The structure of these documents was however the same and contained the permit, a background, the reasons for the permit, and the assessment from the police authority. The municipal's application of permits extended to 8 pages and contained eight main sections: the application, a background, purpose and goal, the situation and the current work, the assignment and mission of the PSOs, a conclusion, contact information, and references. In conjunction with the applications, two appendices were included: The investigations of public safety and the police authority's descriptive crime statistics in relation to the areas of appointment. The appendices were not included in the analysis as these were already referenced within the documents.

It is not the contention of this thesis to compare the differences in characterizations of problems between the permit application and the basis of approval. Instead, I view these as two parts of one material, that represent the joint venture of problem representation. That is, it is only in tandem that the "real" problem is "conceived" and subsequently countered. Surely, the police authority's perspective carries a bit more weight in the process of realization of the intervention but without the problem representation of the municipality, there would not be anything to realize. As such, to answer the research question of interest the approach demands an analysis of the characterization of problems as a whole. Analysing them separately and later adding them up would potentially bring more contrast to the analysis but it would do little for the answer to the focal inquiry in question. Consequently, the presentation of the analysis has been conducted jointly.

It should be mentioned that this approach does not include the third party of the intervention, which are the PSOs and their corporation. Arguably, their view could potentially shed some light on how the intervention is realized on the ground but I argue that it does little for how the problems are represented. The PSOs and their corporation are not part of the process of problem representation but are rather solutions to these problems. The question of whether they are a proper solution to the problems is a better question in this respect, which is being somewhat considered in the quantitative analysis. Consequently, I did not include this party in the material.

The reasons why I chose to conduct my analysis on bureaucratic documents rather than for instance interviewing representative candidates were twofold. The main reason was that the petition and the act evidently contained all information that was necessary for the intervention of "§3" to come to fruition. Interviewing potential candidates could potentially provide a similar type of information, but it would add another dimension of uncertainty, that dynamic

relationship between interviewer and interviewee. Secondly, time spent gathering and analysing information is drastically reduced in comparison to interviews.

Method: Qualitative Content Analysis.

The method which I have applied for my analysis is qualitative content analysis. Qualitative content analysis is a highly systematic yet flexible approach to studying and describing meaning from preferably textual material (Schreier, 2013). The systematic approach centres around the generation of the coding frame. As opposed to the coding process of an inductive approach, the categories or codes should both be theoretically predefined and combined with a data-driven approach (Schreier, 2013). In addition, the main categories should be mutually exhaustive (i.e., referring to separate concepts). Consequently, in consideration of the structure of the systemized coding frame and its flexibility to the material which the data-driven approach provides, it becomes a valid and reliable method with the potential of circumventing biased and invalid analysis (Schreier, 2013).

Now, the main assignment of PSOs, according to the act of private security officers, is to maintain public order. The main theoretically derived category within my coding frame was “Public order” (Allmän ordning). However, as the literature review has shown, public order refers to criminal activity and public perceptions of safety (trygghet/otrygghet). It is these problematizations and the characterizations thereof which are important to examine, as it is these mutually distinct concepts that vary between localities. Public order and the act of private security officers is the legal framework to which those concepts must refer and do not vary between locality as such. Consequently, I did not choose to include public order as a main category. I view it instead as a sort of omnipresent “super category” lurking in the background of my coding frame. Hence, my theoretically predefined main categories were “Criminal Activity and “Perceptions of Safety”. However, during the coding process, I discovered that perceptions of safety were defined through the public’s fears and worries. As such, I decided to rename the main category as “Fear and Worries”. I preceded building the rest of my coding frame with a data-driven approach. This resulted in one additional main category, “Disturbances to order”. Furthermore, four subcategories were created, “Subtypes” of the main category, “Extent of the problem”, “Justification” and the “Causes of problems”.

I applied the formal criteria in the segmentation of the material into coding units. These consisted of either a word or a few words in concessions that paralleled the categories (Schreier

2013). Bacchi's (2009,2012) two questions that guided my analysis were applied in conjunction with the qualitative content analysis as such: the codes and their categories received a frequency count (see Schreier 2013) which identified the problems and their extent. During the coding process, I realized that even though the main categories were mutually exhaustive – i.e., referring to separate concepts - the subtypes of one main category referred to subtypes in other main categories. As such, to generate a representative coding frame, in instances when such convergence appeared, a frequency count was given to all main categories involved. In addition, a code displaying the concept referred to was also given to the main categories involved (e.g. Drugs). This is to better represent which main category and subcategories were the most frequent and as such most pressing, and at the same time to better visualize the structure of the convergence. It was this convergence then that apprised the presupposition of the representation, hence, how the second of Bacchi's (2009,2012) question was applied within the methodology of the qualitative content analysis.

The Quantitative Approach

My initial request to the Swedish police authority was to acquire data on reported crime spanning about a decade of data concerning the greater police district of Gothenburg, of which the public spaces of Case 1 and Case 2 and their immediate surroundings are part. The intention of this rather sizable request was to gather as many data points as possible to be able to robustly discern and model potential differences in trends of the two cases, their surroundings, and the greater police district as a whole. I was however informed that the police authority only had direct access to data spanning the last five years. I was later granted access to data spanning a little more than 4 years (from the first of January 2018 to the twenty-third of February 2022). In short, the original data set contained information on what street a crime occurred and what police district that street belonged to, a short qualitative description of the crime and its four-digit number relating to the Swedish penal code, the date when the report was registered, and the number of occurrences contained in a given report. As such, every observation or data point in the data set represented one occurrence of report registration which contained from 1 up to 193 counts of potential crimes (however, the 1-count category represented 92.94 % of the total number of observations, and the 1-4 count categories together represented 99.55 % of the total number of observations). In total, the data set contained 447 675 observations representing 502 444 counts of reported crimes. 58 661 observations had to be excluded from the original data set because the street or its district could not be identified, representing 13 % of the total number of observations. To create the intervention areas or units of analysis for the cases, I

based my delimitation on the information provided by the municipals' permit applications and the police authorities' basis of approval of the two cases. This presented a problem, as I did not entail the particular address a reported crime was committed, only the street address. As the §3 areas that the PSOs were patrolling did not correspond to complete streets, I deemed it best to remove the streets in which a large part was located outside of the intervention area. Thus, to be more certain that the crimes committed really occurred inside of the intervention area

In Case 1 those streets were "Östra Hamngatan" and "Kronhusgatan". In Case 2 those streets were "Linnégatan" and "Nordhemsgatan". There were also small parts of the first, second and third "Långgatan" which were located outside of the intervention area. Removing these, however, would more or less render the analysis completely invalid as these streets run through the heart of the area and have a lot of pubs and bars on them. As such, I chose to include them. For both of the cases, the results of the qualitative content analysis showed that the crime types of importance for the interventions were "Acquisitive Crime", "Drug-related Crimes", "Vandalism", and "Violent Crime", which were the dependent variables of the analysis. Except for Acquisitive Crime – in which crimes committed against stores were excluded - none of the crime types were provided with a definition in the material for the qualitative analysis. As such, I created these variables based on the Swedish penal codes⁵ corresponding to those crime types (see Brå, 2021). In addition, as there is no crime type in the penal code referred to as "Violent Crime" and its definition in the academic realm varies (Brå 2018:19) I chose a broader definition of it including murder, manslaughter, assault, unlawful threats, a deed which has violated the peace of another (ofredande); kidnapping (människorov and olaga frihetsbrövande); unlawful coercion (olaga tvång) rape, robbery, and violence against an officer (tjänsteman). The choice of including these categories was also based on my reasoning of the possibility of these occurring in the spaces in which the PSOs could potentially interrupt or deter.

To create a data set which corresponded to the chosen design (see next section), I aggregated the data on the four dependent variables by intervention area (unit of analysis) and month. This provided me with 50 observations/time points, from January 2018 to February 2022. The reason for choosing measurement by month instead of day or week was that there were a number of days and weeks that would have no observations (missing or 0, respectively).

⁵ I could only acquire the two more recent ones, from 2021 and 2022. As such there is a possibility that there might be a difference in coding throughout the observed period. However, I conducted an ocular inspection after sub setting the data-set to only describe crime in relation to the two cases. I did not find any difference of specific crime descriptions having different penal codes.

Having count data which are bounded at zero (i.e., many zeroes, ones, twos etc), risks violating the OLS assumptions as the data cannot be considered continuous (Grace-Martin, 2020). For some of the dependent variables collapsing the data by month did not completely solve this issue. For this reason, I chose to transform the measurement of the dependent variables to the monthly ratio of reported crime by the average number of days (i.e., monthly crime rates). That is, every observation/time point represents the average number of crimes per day for a specific month. To do this, I divided the monthly number of reported crimes by the mean number of days in a month. In addition, as the year 2020 was a leap year, I first calculated the mean number of days in a year considering a leap year (365,5) and then divided it by the number of months in a year (12). As such, the monthly values were divided by 30,46. Data measured in ratio is considered continuous, which makes it possible to conduct a linear model (Bhandari, 2021). There is a risk however when regressing ratio measurement in linear models, that the models will show signs of model misspecification (Lien et al., 2017). However, none of the models conducted showed signs of model misspecification. Of course, this will not remedy the problem of that, in reality, the months of the year have different numbers of days, which is why I will include a categorical variable of month in the model, in addition to that there was an unequal number of months in the data-set. Another consequence of choosing month as the point of measurement is that the start of the interventions of the PSOs does not correspond to monthly starting dates, e.g., the first of June. As such, I modelled the starting date as the month immediately following the real date of introduction, July 2020 and Mars of 2021 for Case 1 and Case 2, respectively.

Method: An Interrupted Time Series design

Now, to properly conduct an effect study, at least in terms of internal validity (one measures what one is supposed to be measured), the ideal approach is to conduct a randomized controlled trial, i.e., a “true” experiment. As in my case, this approach is not always feasible, particularly in cases in which the unit of analysis is an area rather than an individual (Farrington 1987; Thomas, 2022).

Hence, to examine to what extent patrolling PSOs within the confines of §3 works, that is, if it results in a reduction of reported crime, I have adopted an interrupted time series (ITS) design and analysis. In a nutshell, it follows the design of a quasi-experimental pre-test post-test, that is, one compares a time series phase before an introduction of an intervention with a time series phase after the introduction (i.e., the intervention). However, rather than comparing means, one compares predicted time point estimations, i.e., one compares how the time series

would have been distributed if the intervention was not introduced (a counterfactual), with how it actually is distributed (Huitema & Mckean, 2000; Lopez-Bernal et al 2016). ITS designs are one of the, if not the, strongest quasi-experimental approaches when randomization is not possible in terms of internal validity, especially when non-randomized similar control units are included in the model (Harris et al., 2006; Penfold and Zang 2013; Linden, 2015; Lopez-Bernal et al 2016). However, I did not include a control unit when conducting the proceeding analysis. In part, identifying units (areas) that are as similar as possible to the focal units is a very time-consuming process, time that to a degree I did not have at my disposal. In addition, the original data set acquired only represented the greater police district of Gothenburg, which renders options fairly slim. However, the single-unit interrupted time series analysis does still provide a high degree of internal validity, in large respect to its control over the confounder: regression to the mean (Linden, 2017: see Farrington 1987). As an ITS design is a quasi-experimental approach, the trade-off in internal validity with respect to RCTs, is a higher degree of external validity, particularly the degree of ecological validity (Thomas, 2022; Glen, 2020). That is, the results of this study can be generalized to other similar public places to that of Case 1 and Case 2. Hence, in addition to the potential of a high degree of internal validity, this study will most possibly have a high degree of external validity.

As a consequence of that the ITS design models effects of different parameters of time on the dependent variable (crime type), there are two new takes on the properties of the error terms (or rather the residuals of the model, as this is what is modelled to gain insight about the unobservable error terms) that need to be met, in regard to the regular OLS assumptions⁶ (Huitema & Mckean, 2000:40). The first one is that every observation (point in time) is independent, that is that no observation should contain information that can be used to predict another observation, i.e., the residuals should not be autocorrelated. The second refers to the probability distributions of the error terms, these should be identical, meaning that there should not be a trend or unit root present in the data set as this would infer that the observations have different distributions- i.e., the data should describe a stationary process (Huitema & Mckean, 2000:40; Frost, 2020; see Mehmetoglu & Jakobsen 2017:148-157)

Another requirement relates to the question of sufficient power, e.g., a sufficient number of observations to model valid estimations. In general, there does not seem to exist an objective measure in relation to ITS, as this all depends on the characteristics of the data (Lopez

⁶ The assumption tests of the different models conducted are addressed in the introducing section of the analyses.

Bernal et al., 2016). However, a minimum of eight time points per phase is suggested by Penfold and Zang (2013), but 40-60 time points in total equally distributed is usually praxis in time series designs, however, more time points allocated to the phase of the preintervention is more important (Corsaro, 2018). In all the models conducted in this thesis, the number of time points is either 38, 49 or 50, suggesting sufficient power for valid results.

The variables and their models

Table 1 and 2 represents the descriptive statistics for the variables used in the different models conducted, respectively. Every model (M) represents the modelling of one dependent variable (crime type). To meet the criteria of the time series and OLS assumptions, most of the dependent variables previously described had to be transformed (see Appendix B for the distributions of the untransformed dependent variables). The section that follows, will as such present the transformations and what they mean for the model, case by case, in addition to their covariates. However, the independent variables all represent the same concept for all the models - i.e., different coding of time: T is a continuous interval variable representing time since the start of the study. X is a dummy variable representing the intervention, where the number (e.g., “2020m7”) denotes the starting month of the intervention. All time points preceding the start of the intervention are coded as zero and all time points following are coded as one. XT is an interaction term of X and T, as such, it represents the time since the start of the intervention (Linden, 2015). These variables are modelled from the dependent variable and its transformations, as such the descriptive differences between the models for the same type of variables as seen in Tables 1 and 2, are due to this. As crime tends to have a seasonal pattern (see McDowall et al 2011) I included the categorical variable of month to control for this correlation, in addition to that there are a different number of days in the months of the year. This variable was included in all the models except for model 4 in Case 1.

For Case 1 (see table 1), the models and their variables follow the process of a two-phase design, i.e., pre- and postintervention. All the original outcome variables are continuous ratio variables and represent the monthly crime rates as described in the previous section. For model 1 (M1) the outcome variable of “First D. Acquisitive Crime” is a first-order difference transformation of the original outcome variable. This was due to that the residuals of the model were not stationary. As such, every observation and its value of the outcome variable in the original time series was subtracted by the value of the preceding observation, creating a first-order differenced time series (Hyndman & Athanasopoulos, 2018). Consequently, the first observation of the time series is dropped as it does not have a preceding observation. As such,

Table 1: Descriptive statistics of Case 1

Case: 1

Variable	Obs	Mean	Std.dev	Min	Max
<u>Dependent:</u>					
M1: First D. Acquisitive Crime	49	-.00335	.143923	-.3611293	.525279
M2: $^2\sqrt{x}$ Drug Crime	50	.4702831	.1869485	0	1.008825
M3: $^2\sqrt{x}$ Vandalism	50	.4383839	.1249686	.1811903	.7470669
M4: Seasonal D. Violent Crime	38	.0069116	.1291181	-.2626395	.2626395
<u>Independent</u> Models M2, M3					
T	50	24.5	14.57738	0	49
X2020m7	50	.4	.4948717	0	1
XT2020m7	50	3.8	5.972727	0	19
Month	50	6.3	3.558548	1	12
<u>Independent:</u> Model M1					
T	49	24	14.28869	0	48
X2020m7	49	.4081633	.496587	0	1
XT2020m7	49	3.877551	6.009134	0	19
Month	50	6.3	3.558548	1	12
<u>Independent:</u> Model M4					
T	38	18.5	11.11306	0	37
X2020m7	38	.5263158	.5060094	0	1
XT2020m7	38	5	6.409452	0	19

the descriptive statistics in table 1 for the outcome “First D. Acquisitive Crime” represent the difference between monthly crime rates. As seen in table 1, the differenced values range from -.36 to .53 with a mean difference of -.003. This indicates that there is a general, very small, monthly decreasing trend in the data set of .003 fewer crimes per day. The outcome variable of model 2 (“ $^2\sqrt{x}$ Drug Crime”) is the square root ($^2\sqrt{x}$) transformation of the original variable “Drug Crime”. As such, every observation represents the square root of monthly crime rates. This transformation was conducted as the residuals of the model did not have an approximate normal distribution, which is important when using the regression models for prediction (see Choueiry, n.d.), which the interrupted time series analysis does use. The values range from 0

to 1.01 with a mean of .47. This indicates that the average month had .47 reported crimes per day. However, as the mean is based on square-rooted values it is not technically representative of the “true value”⁷. Similarly, “ \sqrt{x} vandalism” represents the square root of monthly crime rates for Vandalism and it was transformed for the same reason as the previous variable. The values range from .18 to .75 with a mean of .44 (see table 1). As such, the average month experienced .44 reported crimes per day. The outcome variable for the last model (Seasonal D. Violent Crime) is a seasonal differenced transformation of the original variable (“Violent Crime”). This means that the values of the outcome variable were subtracted from the value of the corresponding time point from the year preceding (e.g., the value of January 2021 – the value of January 2020). As such, the outcome variable in model 4 represents the annual seasonal difference in monthly crime rates. Once again, the reason for this differencing was that the residuals of the original model were not stationary. The values range from -.26 to .26 with a mean of .007, indicating a very small monthly increase of .007 crimes per day. Another consequence of this differencing was that the factor variable for month became redundant, and was as such excluded from the model.

In Case 2 the models and their variables follow a three-phase design (pre-, first, and PSO intervention). This allowed me to model the potential effect of the first year of the Covid-19 pandemic and its restrictions as it provided me with the necessary number of time points. Deciding the starting point for this “intervention” was not a clear-cut choice. One can presume that the amount of media coverage the spread of the virus got will at least influence some people to change their routine activities regardless if there were palpable restrictions in place. As such, I modelled the start of the effect of the Covid-19 pandemic at Mars in 2020 as it was in this month the World Health Organization stated it as a global pandemic (WHO, 2020).

The outcome variable of “Acquisitive Crime” in model 1 (see table 2) represents the monthly crime rates of Acquisitive Crime. The values (crime rates) range from .33 to 6.44 crimes with a mean of 1.37, indicating that the average month experienced 1.37 reported crimes per day. In model 2, the outcome variable “ \sqrt{x} Drug Crime” is the square root transformation of the original variable, representing the monthly crime rates of drug-related reported crime. The monthly crime rates range from .36 to 1.2 with a mean of .76, indicating that the average month experienced .76 crimes per day. The outcome variable for model 3, First D. Vandalism, is a first-order difference transformation of the original outcome variable which represented

⁷ A discussion regarding interpretation of the models with square rooted outcome variables can be found in the limitations section.

the monthly crime rates of Vandalism. Therefore, it now represents the difference between the consecutive monthly crime rates. The differenced monthly crime rates range from -1.54 to 1.25 with a mean of -.01, indicating an average small monthly decrease of .01 crimes per day. For the last model (4), the outcome variable “ \sqrt{x} Violent Crime” is a square root transformation of the original variable, which represents monthly crime rates of violent crime. The monthly crime rates range from .31 to 1.29 with a mean of .78, indicating that the average month experienced .78 reported crimes per day.

Table 2: Descriptive statistics of Case 2

Case: 2

Variable	Obs	Mean	Std.dev	Min	Max
<u>Dependent:</u>					
M1: Acquisitive Crime	50	1.773473	.6235922	.3282994	3.644124
M2: \sqrt{x} Drug Crime	50	.7620045	.1787119	.3623807	1.201881
M3: First D. Vandalism	49	-.01005	.5234893	-1.543007	1.247538
M4: \sqrt{x} Violent Crime	50	.7775363	.1871044	.3138309	1.293958
<u>Independent</u>					
models: M1, M2 M4					
T	50	24.5	14.57738	0	49
X2020m3	50	.48	.504672	0	1
XT2020m3	50	5.52	7.559937	0	23
X2021m3	50	.24	.4314191	0	1
XT2021m3	50	1.32	2.923794	0	11
Month	50	6.3	3.558548	1	12
<u>Independent</u>					
Model: M3					
T	49	24	14.28869	0	48
X2020m3	49	.4897959	.5050763	0	1
XT2020m3	49	5.632653	7.595761	0	23
X2021m3	49	.244898	.434483	0	1
XT2021m3	49	1.346939	2.947817	0	11
Month	50	6.3	3.558548	1	12

Limitations

In this section I'm going to address some issues in regard to the internal and external validity of this thesis. First and foremost, the use of reported crime data as a measure of occurrences of criminal incidents has some inherent issues. Naturally, not all criminal incidents are reported to the police authority and not all reports are later investigated, legally pursued, and/or result in a conviction. To avoid a long philosophical discussion of what constitutes a crime, we can at least be certain that a reported crime represents a phenomenon that disrupts the ordinary spectrum of peace and order, perhaps then better classified as a disturbance to order. Regardless, as we have seen in the previous analysis, reported crimes are used as a measure of crime and disorder. A potentially more important issue in regard to my inquiry, the date of the reported crime in my data set does not necessarily represent the actual date of the incident, but the date when it was reported. This introduces an unknown factor of latency between the measure and what it measures, which probably varies between crime types and between cases. However, that this would affect my inquiry to an extent that it makes it invalid is very unlikely, especially since I measure reported crime in monthly crime rates.

The most pressing confounding factor in my inquiry is the Covid-19 pandemic and the restrictions thereof. Exactly to what extent the pandemic/restrictions have affected levels of reported crime - in terms of shaping individuals' routine activities and access to retail and recreational establishments, as well as the disposition of PSOs and police officers had with respect to engaging in incidents that require close contact with people, and the potential effect on the people who register and report calls for service as well as the incidents in themselves - is difficult to state, particularly in relation to the public spaces addressed in this thesis. Albeit, it's probable that it resulted in a decrease in levels of reported crime as has been demonstrated both nationally and internationally (for instance see Stickle & Felson 2020). Indeed, in Case 2, I have included a phase representing the first year of the Covid-19 pandemic, mentioned previously. However, the pandemic and the restrictions were still in effect when the §3 intervention was introduced, which introduces a potential issue as I cannot be certain that the effect would be the same in both phases. However, I presume them to be similar.

Another issue is related to the exclusions of observations from the original data set because of missing information. As the original data set represented the greater police district of Gothenburg (Stor Göteborg) it is difficult to say how the analysis was affected. To manually go through more than 58 000 observations searching for misspellings and other deviations from

the” correct” format of the street name would have been a too time-consuming process. As such, I assume that the “deviations” were consequences occurring at random rather than systematically, which would bias the results.

Lastly, the square root transformations of the dependent variable, transformations which were conducted in half of all models. Square-rooted transformations introduce a problem to the intuitiveness of the interpretation of the coefficients. As the coefficients in my models represent the difference between parameters or mean of parameters (i.e., the trend), which are based on square-rooted values, they do not represent the actual difference in crime rate and should not be interpreted as such – the significance and direction of the relationship can, however, still be inferred as such. A single parameter, as the constant in the models, can be squared to acquire the actual crime rate but this is not possible with coefficients. However, the transformations will bring a higher degree of validity to the models. Hence, the question of effect sizes will be problematic to infer, but we can be certain that the models will be more valid, which I believe is more appropriate.

Results

The aim of this thesis was to gain knowledge of the extent private security officers patrolling public spaces work. By considering the conditions the PSOs are intended to address, this chapter covers the analysis and the results in consideration of the main research question: Why is the intervention implemented and to what extent does it work? The qualitative and quantitative analyses of the two cases will be covered in their respective section.

The Qualitative analysis

This section will cover the first part of my examination: what are the problems the PSOs are supposed to remedy? The analysis of the cases will be covered sequentially and the section will end with a comparative analysis of the cases.

Case 1

Problem representation: Criminal activity

“Criminal activity” is by far the most frequent problem explicitly and implicitly mentioned (61 times) within the material, representing 50% of the total distribution of main categories. Criminal activity is being represented as a quite serious and large problem, particularly during the daytime and summer months, being a “hot spot” with “5 arrests a day”, which is a stable problem on the site while at the same time increasing. As such, it is relatively safe to state that criminal activity is the main problem that the PSOs are supposed to remedy. This interpretation

is supported by both the variety in nature and number of representations (i.e., codes) within the subcategory “Extent”, in comparison to the other main categories (see table 1). The most pressing concern on the site, however, is criminal activity related to drugs. The code count represents 42% of the total distribution within the main category. This interpretation is also supported by the extract from the municipal’s application document of the material:

“Many of those areas within “The Moat” the petition concern is included in what the police authority themselves characterize as the Drug Scene of Gothenburg, in the effect of the presence of narcotics within these areas”.

Excluding the “General” (17) code, which refers to criminal activity in general and as such can be conceptually allocated to the other codes, the crime types which are mentioned most and as such are the largest problems within the site are Drugs (25), Vandalism (8), Violence (3), and Acquisitive crime (3).

Problem Representation – Fear and Worry

“Fear and Worry” is the second most frequently mentioned problem within the material (42), representing 34% of the total distribution of the main categories. The problem on the site is being represented as being present during particular times of day and especially during the evening/night. It is also represented as being a larger problem than what “Criminal activity” is and there are higher levels of fear and worry in connection to the site in comparison to other areas. The most frequent subtype code mentioned within the material by far is the “general” code (27), which means that “Fear and Worry” is largely undefined. However, the rest of the codes show a high convergence with the other codes within the subcategory of the other main categories, i.e., Criminal activity and Disturbances to order (see figure 1). As such, people feel fear of and worry about crime and disturbances to order in general, and in particular, crimes related to violence, drugs and robberies, as well as gangs who act loud, aggressive and threatening. As also described in the extract below, “Fear and Worry” in connection to the site is characterized as sharing the same genealogy as “Disturbances to order”.

“Low perceptions of safety and disturbances to order arise in the area as a consequence of, for instance, formations of gangs where people act loud, aggressive, or threatening”.

This convergence in characterization then, indicates that “Fear and Worry” is a consequence of the problems of “Criminal Activity” and “Disturbances to order”, on the site.

Table 3: Coding frame of Case 1

Problems	Criminal activity (61)	Fear and Worry (42)	Disturbances to order (19)
<i>Subtypes of - what is referred/related to</i>	<ul style="list-style-type: none"> - General (17) - Drugs (25) - Vandalism (8) - Violence (3) - Acquisitive crime (3) - Threats (1) - Other crimes against persons (1) - Robbery (1) 	<ul style="list-style-type: none"> - General (27) - Drugs (1) - Crime (4) - Violence (1) -Disturbances to order (1) - People who appear Aggressive (2) Threatening (1) Loud (1) - Robbery (1) 	<ul style="list-style-type: none"> -General (13) - Smoking youths (1) - Litter (1) -People who appear Aggressive (1) Threatening (1) Loud (1) Bothersome (1)
<i>Extent The extent of the problem</i>	<ul style="list-style-type: none"> - The seriousness (1) - An increase (2) - Large Problem (1) - Summer (1) - Day time (1) - Stable (1) - Hot-spot (1) - 5 arrests á day (1) 	<ul style="list-style-type: none"> - evening/night (4) - particular times of day (1) - Larger than crime (1) - Higher than in other areas (1) 	<ul style="list-style-type: none"> - “Because of the extent” (1)
<i>Justification</i>	<ul style="list-style-type: none"> -Strengthen efforts against (2) 	<ul style="list-style-type: none"> - Strengthen efforts against (3) 	
<i>Causes of problems</i>	<ul style="list-style-type: none"> - Displacement from other areas (1) 	<ul style="list-style-type: none"> - Gangs of youths (2) - Gatherings of adults and youths (1) - Formation of Gangs (1) 	<ul style="list-style-type: none"> -Displacement from other areas (1) -Formation of Gangs (1)

Contextualising this interpretation with the representation that “Fear and Worry” is a larger problem than “Criminal activity” is on the site, suggests that levels of disturbances to order make up the discrepancy between the intention of the representation (i.e., larger than crime) and the amount of coverage (i.e., count frequency) “Criminal activity” and “Fear and Worry” were provided in the material. However, “Fear and Worry” is represented as being present during the evening/night, which is in opposition to “Criminal activity” as it is represented as most common during the day. This indicates that “Fear and Worry” is in addition to its composition of criminal activity and disturbances to order, its own problem (i.e., not entirely caused by levels of criminal activity and disturbances to order on the site).

Problem Representation – Disturbances to order

“Disturbances to order” (19) is the third most frequent problem concept, representing 16% of the total distribution of the main categories. Similar to the previous problem, “Disturbances to order” is generally represented as an undefined extensive problem, as indicated by the general code being far most frequently mentioned within the material. The other subtypes referred to, however, indicate that much of the reason that this problem occurs, and as such how the problem is defined, is that some people are a nuisance to other people. That is people who appear bothersome, loud, threatening and aggressive, as well as people who litter and youths who smoke. As already mentioned, there is a convergence to the problem of “Fear and Worry” here. However, as the extract below indicates, there is also some conceptual overlap with “Criminal activity”.

“In addition to, and in connection to criminal activities, different types of disturbances to order occurs”.

Similarly, considering the codes of the subcategory “Causes of problems” we can also see that both categories - criminal activity and the disturbances to order - share a genealogy on the site: that both these problems have been displaced from other areas. Hence, they are represented as a joint problem. Consequently, this representation then entails that some of the people, (i.e., the formation of gangs) who cause the disturbances to order (e.g, the people who act aggressive and threatening as well as the youths who smoke) are the ones who commit crimes and ultimately the ones who generate fear and worry in connection to the site among the public.

A Presumption of a Causal Chain

As the problem representations are converging and referring to one another, an underlying presupposition of a causal chain start to appear in the material. That is, the structure of the

convergence between the problem representations provides a logical linkage which highlights the main most important problem by its connectivity to the other problems, and ultimately how the ‘super problem’ of the breach in public order is primarily remedied.

At the end of the chain, the main goal of enforcing public order. This is stated within the ‘Act on Private Security Officers’ and which the municipal application of permit is claiming that there is an ‘essential need’ to enforce at the site. Considering that “Fear and Worry” is largely a composite problem, caused by the existence of criminal activity and disturbances to order, the breach in public order then refers to - and as such is defined through - high levels of criminal activity and disturbances to order. In turn, disturbances to order are linked to criminal activity in that, criminal activity is a type of disturbance to order, as indicated by the previous extract. Only criminal activity is referred to and defined through its own subtypes. As such, criminal activity is the main problem and the mechanism by which the other problems are affected and ultimately how the breach in public order is remedied (i.e., enforcing public order is defined through combating criminal activity). This interpretation is also supported by the extract below.

“The purpose is that the private security officers will contribute to strengthening the crime preventative work that will lead to the promotion of the public’s perceptions of safety”

In other terms, the PSOs will reduce the levels of criminal activity, and in effect disturbances to order, through their presence and their extended powers, which then will result in the public’s fears and worries connected to the site will decrease, and the breach in public order will be remedied.

Case 2

Problem representation – Criminal Activity

“Criminal activity” is the most frequent problem explicitly and implicitly mentioned (45) in the material, representing 43% of the total distribution of main categories. “Criminal activity” is represented as being a serious and increasing problem within the site. The types of criminal activity which are distinguished as being the most problematic then is criminal activity related to drugs, violence, acquisitive crime, vandalism, illegal distribution, and other crimes against persons, respectively. In turn, this/these problem(s) is caused by the “high demand for drugs and alcohol” and the large number of “pubs” in the area. In addition, the recent increase in criminal activity is explained by a displacement from other areas in which “measures” against

Table 4: Coding frame of Case 2

Problems	Criminal Activity (44)	Fear and Worry (27)	Disturbances to Order (18)
<i>Subtypes of what is referred or relates to</i>	<ul style="list-style-type: none"> - General (11) - Drugs (11) - Violence (6) - Vandalism (6) - Acquisitive crime (3) - Other Crimes against persons (2) - Illegal distribution (2) 	<ul style="list-style-type: none"> - General (11) - Drug trade (2) - Violence (2) -Intoxicated people (3) -Disturbances to order (2) - People who appear Loud (1) Threatening (1) Aggressive (1) 	<ul style="list-style-type: none"> -General (8) -Different kinds of (3) - Crime (1) - Vandalism (1) -People appear Loud (1) Threatening (1) Aggressive (1) Bothersome (1)
<i>Extent The extent of the problem</i>	<ul style="list-style-type: none"> - The seriousness (2) - An increase (3) 	<ul style="list-style-type: none"> - Large (1) - Evening/night (2) - particular times of day (1) - some places are more palpable (2) - an increase (1) 	<ul style="list-style-type: none"> - “Because of the extent” (2) - Some periods (1)
<i>Justification</i>	<ul style="list-style-type: none"> - Efficacy of PSO other areas (3) 	<ul style="list-style-type: none"> - Efficacy of PSO other areas (2) - Strengthen efforts (2) 	<ul style="list-style-type: none"> - Efficacy of PSO other areas (1)
<i>Causes of problems</i>	<ul style="list-style-type: none"> - The demand for alcohol and drugs (1) - A lot of pubs (1) - Displacement from other areas (1) - Covid – 19 (1) 	<ul style="list-style-type: none"> - The demand for alcohol and drugs (1) - A lot of pubs (1) 	<ul style="list-style-type: none"> - The demand for alcohol and drugs (1) - A lot of pubs (1)

disturbances to order were implemented, in conjunction with the effects of the Covid-19 pandemic and the restrictions thereof. This can also be inferred from the extract below.

“The police note that there has been a displacement of criminal elements towards this area, which may be due to, among other things, that measures have been taken against disturbances to order in the central city and that the covid pandemic has meant that restaurants on ‘Avenyn’ have not attracted as many people in 2020”

The extract also indicates a convergence between criminal activity and disturbances to order in that “measures” against “disturbances to order” affect the displacement of “criminal elements”. Furthermore, considering the subcategory of “Justification”, PSOs are represented as particularly efficient in reducing criminal activity in comparison to the same subcategory in the other main categories (i.e., “Fear and Worry” and “Disturbances to order”).

Problem representation – Fear and Worry

Fear and Worry is the second most frequent problem mentioned in the material (27), representing 26% of the total distribution of main categories. It is represented as an increasingly major problem that is more palpable in certain areas within the site and particularly during the evening and night-time. As the most frequent code within the subtype category is the “general” code, the problem representation is generally undefined. However, the rest of the codes within the same subcategory show convergence to the other problems, “Criminal activity” and “Disturbances to order”. Specifically, “Drug trade” and “Violence” is connected to “Criminal activity” and “Disturbances to order” and people who appear loud, aggressive and threatening are linked to “Disturbances to order”. The only subtype which is not explicitly shared with other main categories is “Intoxicated individuals”, which is the second most mentioned subtype code in the distribution. Conceptually, however, and to also consider the codes within the subcategory “causes of the problems” – i.e., “the demand for alcohol and drugs” and “a lot of pubs” which it shares with both “Criminal activity and “Disturbances to order” - this indicates that the problem is fairly connected to the other two, both in genealogy and in subject. This interpretation is also supported by the extract below:

“The perceived notions of unsafety are described as largest during evening and night time and consist of worries of a more or less overt trade in narcotics, the presence of individuals in the influences of drugs and alcohol, violence, and different types of disturbances to order.”

As such, “Fear and Worry” is characterized as a consequence of criminal activity and disturbances to order within the site, and as such is represented as being a composite problem.

Problem representation – Disturbances to order

“Disturbance to order” is the third most frequent problem concept mentioned in the material (18), representing 17% of the total distribution of the main categories. It is represented as an extensive problem on the site and is more intense in certain periods of the year. Much like “Fear and Worry”, the “general” (8) and the “different kinds of” (3) subtypes codes are mentioned most, referring in large to an undefined problem. However, as already mentioned and exemplified above, the rest of the subtype codes refer to “Fear and Worry” but also to “Criminal activity” (i.e., crime and vandalism). As such, disturbances to order at the site are defined as criminal activity, and some people are a nuisance to other people (i.e., people who appear loud, threatening, and bothersome). This convergence in representation indicates that “Criminal activity” and “Disturbances to order” are a joint problem, (i.e., criminal activity is inherently a disturbance to order). In addition, considering the extract below it is also its own problem.

“In addition to, and in connection to criminal activity, there are various forms of disturbances to order”

Furthermore, like the previous problem concepts, the generation of the problem is caused by the high demand for alcohol and drugs and the number of pubs in the area. Consequently, the culprit(s) to all of the three problems at the site are represented as being intoxicated people.

Presumption of a Causal Chain

In summary, the problem which is provided with the most coverage within the material is “Criminal activity”, followed by “Fear and Worry” and “Disturbances to order”, respectively. In addition, there is a convergence present between these problems. “Fear and Worry” is defined as fear and worries about certain criminal activities and disturbances to order. In turn, “Disturbances to order” is defined as criminal activities and other disruptive behaviours toward the public. Only “Criminal Activities” is referred to, and defined through its subtypes. As such, this structure of convergence points to a presumption of a causal chain between the problem categories (i.e., a logical hierarchal linkage, which appraises the main problem, and ultimately how the ‘super problem’ of a breach in public order is remedied).

As the Act on private security entails, enforcing or maintaining public order is the main goal of the §3 intervention, which the municipal application of permit is claiming there is an ‘essential need’ to enforce. Considering that “Fear and Worry” is largely a composite problem, caused by the existence of criminal activity and disturbances to order, the breach in public order then refers to - and as such is defined through - high levels of criminal activity and disturbances to order. This interpretation is also supported by the extract below (i.e., enforcement of public order and what it refers to is conceptually different from “Fear and Worry”). “Disturbances to order” then, is linked to “Criminal activity” in that, criminal activity is a type of disturbance to order. Only criminal activity is referred to and defined through its subtypes. As such, criminal activity is the main problem and the mechanism by which the other problems are affected and ultimately how the breach of public order is primarily remedied.

The main assignment of the private security officers is to contribute to the enforcement of public order and in addition, through their presence, provide a sense of safety to the public.

To summarize, PSOs are implemented is to reduce criminal activity, which will by the structure of the convergence, reduce disturbances to order and the public’s fear and worries in connection to the site. In addition, as the extract above entails, a by-product of their assignment is that fear and worries will be further reduced by their very presence.

Comparative analysis of the Cases

All in all, both cases show very similar problem representations and subjects: Criminal activity is provided with the most coverage, followed by “Fear and Worry and “Disturbance to order”. Similarly, the same type of structure of convergence between the problem categories emerged in both cases, apprising criminal activity as the main true assignment of the PSOs. As such, enforcing “Public Order” is archived by reducing “criminal activity” and by that action “Disturbances to order”. In turn, the public’s fears and worries are reduced. The by-product of this causal chain is that reducing “Criminal activity” in conjunction with the very presence of the PSOs will lower the public’s “Fear and worries” even more.

Considering that the cases are separated in both time, space and characteristics of place, some dissonance is to be expected. One is naturally the difference of subjects or codes within the subcategories, which is most likely a consequence of the difference in routine activities associated with the sites. Another regards the “justification” subcategory of the coding frame, in which statements attesting to the effectiveness of PSOs is present within all

main categories of Case 2 but completely lacking in Case 1. As the permit by the police authority of Case 1 is about 8 months prior to that of Case 2 - in addition to that I took a few years to be granted a permit in Case 1 – this difference is likely due to a learning curve of the municipality’s application strategy. More interestingly, however, as the analysis has shown that criminal activity is the main problem, the four most frequent subtypes of criminal activity are “Drugs”, “Violence”, “Vandalism” and “Acquisitive crime”. A distribution shared by both cases. Of course, these are relatively broad concepts and cover many different types of crime. In addition, the geographical distance between the public spaces the cases concern is not great, about one kilometre as the crow flies, which could explain this overlap. Regardless, these minor differences have no impact on the result of the analysis.

To briefly conclude this analysis section, as the analysis has shown that the main assignment of the PSOs is to reduce crime, this positions the §3 intervention within a Hot spot policing paradigm. As such, within the deterrence framework. That is the PSOs will reduce crime by being a deterrent to criminal activities within the sites. Hence, the natural next step is to conduct a quantitative analysis of the potential effects on criminal activity. This is what the next section will process.

The Quantitative analysis

In all models, I have conducted OLS regressions with Newey-West standard errors, using the “ITSA”- command in Stata (Linden, 2015). This allows me to account for possible autocorrelation as well as heteroscedasticity of the residuals. Hence, the structure of the autocorrelated residuals is presented in conjunction with the individual models and the diagnostics tests in regard to homoscedasticity are not presented. What follows in the paragraph below is a short presentation of the diagnostics tests conducted and the results thereof on the models.

Initially, I conducted both the Shapiro-Wilk and the skewness and kurtosis test for normally distributed residuals, which all models presented passed. Similarly, the specification link test for single-equation models did indicate that all models were correctly specified. I also conducted the augmented Dickey-Fuller unit-root test which indicated that the residuals of all models were generated by a stationary process. In addition to testing the residuals of the models I initially tested the outcome variables for unit roots. All outcome variables, except for “S12.Violent crime” (Model 4 in Case 1), described a stationary process. Initially, the unit-root test did indicate the residuals of the model were not generated by a stationary process.

However, after removing the indicator variable for month the unit-root test did indicate that the residuals of the model were generated by a stationary process. To assess whether the model did benefit from including this variable or not, I conducted two simple OLS regressions comparing the adjusted R^2 and root MSE. As the restrictive model had a higher adjusted R^2 and a lower root MSE I decided to exclude the monthly indicator variable from the model. To assess the presence of multicollinearity I conducted a variance inflation test. In case 1, all models, except model 4, did not provide any indication of multicollinearity. The presence of multicollinearity in model 4 is not very surprising, as the model represents an annual differenced time series and includes an interaction term. In addition, it is not something that is easily remedied as excluding one of the independent variables would render the analysis useless. However, the presence of multicollinearity will be taken into account when interpreting the results. Similarly, all models in case 2 indicated signs of multicollinearity, with almost exactly the same kind of results for the same variables. This makes me suspect that the multicollinearity is structural in nature. Once again, I am unable to remedy this problem as removing the variables would render the analysis useless. Instead, I will take this result into account when interpreting the results of the models. Lastly, the interquartile range test did not show any signs of serious outliers in any of the models.

Case 1

Model 1 in table 5 represents the OLS regression with Newey-West standard errors for Acquisitive crime, controlling for autocorrelation at lag 1 (see also Figure1). The dependent variable was transformed to the first-order difference to remedy the non-stationarity of the residuals of the original model. This means that every observation represents the difference between the second and first observation, consecutively. Additionally, this also means that the constant term of the model represents the trend of the whole period modelled, and not the estimated starting level. To summarize the following paragraph, there was no indication that patrolling security officers had an effect on reported acquisitive crime. The average difference, i.e., the trend represented by the constant, in the observed four-year period was insignificant, indicating that the levels of reported crime rates were fairly stable throughout the whole period. None of the main coefficients were significant indicating that the intervention of the PSOs had no effect on levels of reported acquisitive crime. Therefore, the null hypothesis cannot be rejected. Furthermore, all the indicators for a month showed a positive sign in comparison to the month of January. However, only in February and May were these significant suggesting that levels of reported crime were on average stable throughout the year.

Table 5: Regression table of Case 1

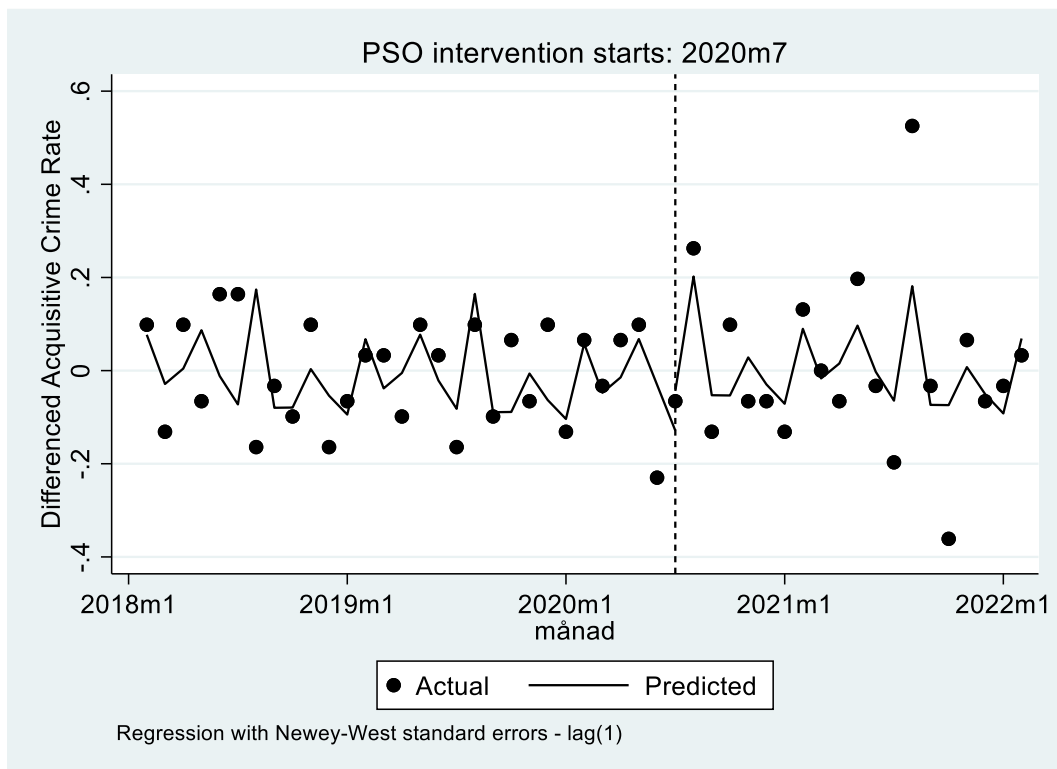
	Model 1 D1. Acquisitive Crime	Model 2 ($^2\sqrt{x}$) Drug Crime	Model 3 ($^2\sqrt{x}$) Vandalism	Model 4 S12. Violent Crime
Pre-intervention trend	-0.000788 (-0.30)	-0.00108 (-0.35)	0.00340 (2.02)	0.00857*** (5.08)
2020m7 difference: PSO vs Pre	0.0478 (0.97)	0.0971 (1.36)	0.0666 (1.68)	-0.0316 (-1.23)
Trend difference: PSO vs Pre	-0.000941 (-0.18)	-0.0163** (-3.01)	-0.0152*** (-5.41)	-0.0135*** (-5.07)
2022m2 difference: PSO vs Pre		-0.2124 (-1.84)	-0.2229*** (-3.45)	-0.2886*** (-5.21)
2021m6 difference: PSO vs Pre			-0.1010* (-2.07)	-0.1804*** (-4.77)
2020m9 difference: PSO vs Pre				-0.0586* (-2.27)
January	0 (.)	0 (.)	0 (.)	
February	0.163*** (4.11)	0.0656 (0.93)	-0.0193 (-0.43)	
Mars	0.0577 (1.19)	-0.0816 (-0.86)	-0.123 (-1.84)	
April	0.0916 (1.50)	0.109 (1.47)	0.0384 (0.62)	
May	0.175** (2.75)	0.149 (1.78)	-0.0851 (-1.81)	
June	0.0772 (0.91)	0.0980 (1.02)	0.0405 (1.10)	
July	0.0171 (0.19)	0.125 (1.28)	0.0774 (0.81)	
August	0.265 (1.71)	0.299* (2.08)	-0.0908 (-1.65)	
September	0.0114 (0.26)	0.141* (2.45)	0.132* (2.15)	
October	0.0126 (0.11)	0.0496 (0.87)	0.0961 (1.51)	

November	0.0960 (1.76)	-0.0605 (-0.76)	-0.00929 (-0.20)	
December	0.0398 (0.57)	-0.142* (-2.06)	-0.0313 (-0.46)	
Constant	-0.0857 (-1.54)	0.458*** (5.23)	0.385*** (9.34)	-0.0674*** (-4.55)
Observations	49	50	50	38
F	2.784***	7.109***	22.70***	10.06***

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

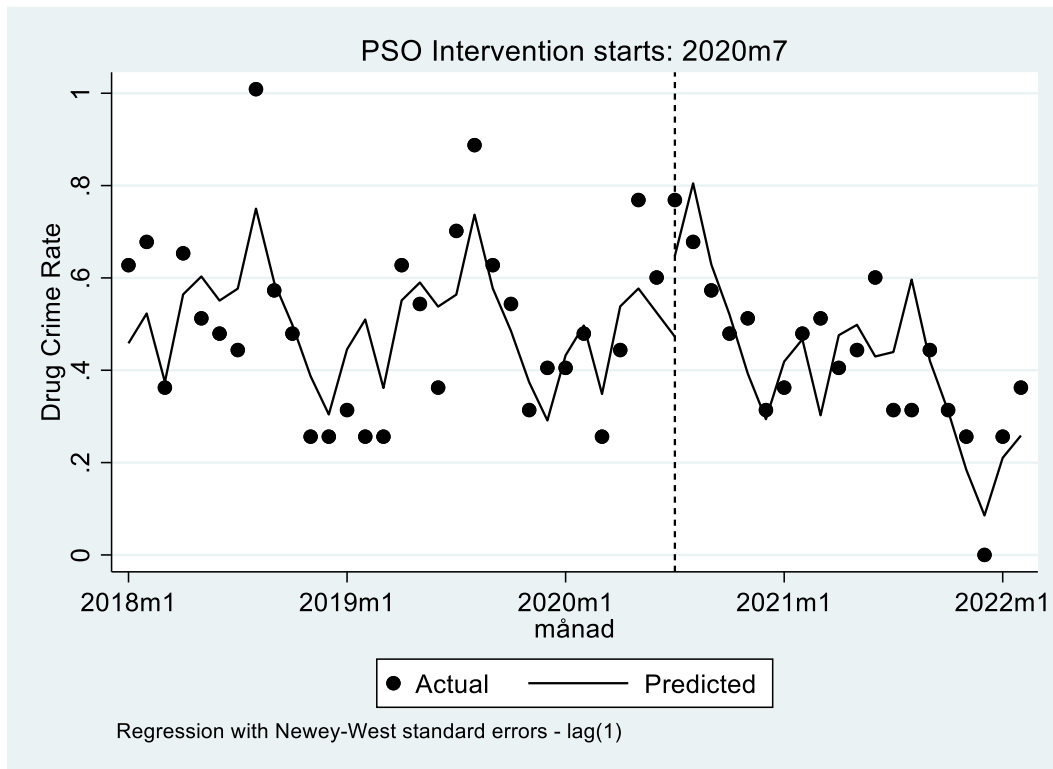
Figure 1: Monthly differenced distribution of reported Acquisitive Crime Rate



Model 2 in table 5 represents the OLS regression with Newey-West standard errors for Drug-related crime, controlling for autocorrelation at lag 1 (see also Figure 2). To approximate a normal distribution the dependent variable was transformed to its square root. This means that the coefficients represent 1-unit square root change.

In short, there was no effect of the intervention on reported drug-related crime rate. As the regression table show, the starting estimated level of the 4-year period was 0.46

Figure 2: Monthly square rooted distribution of reported Drug related crime rate.



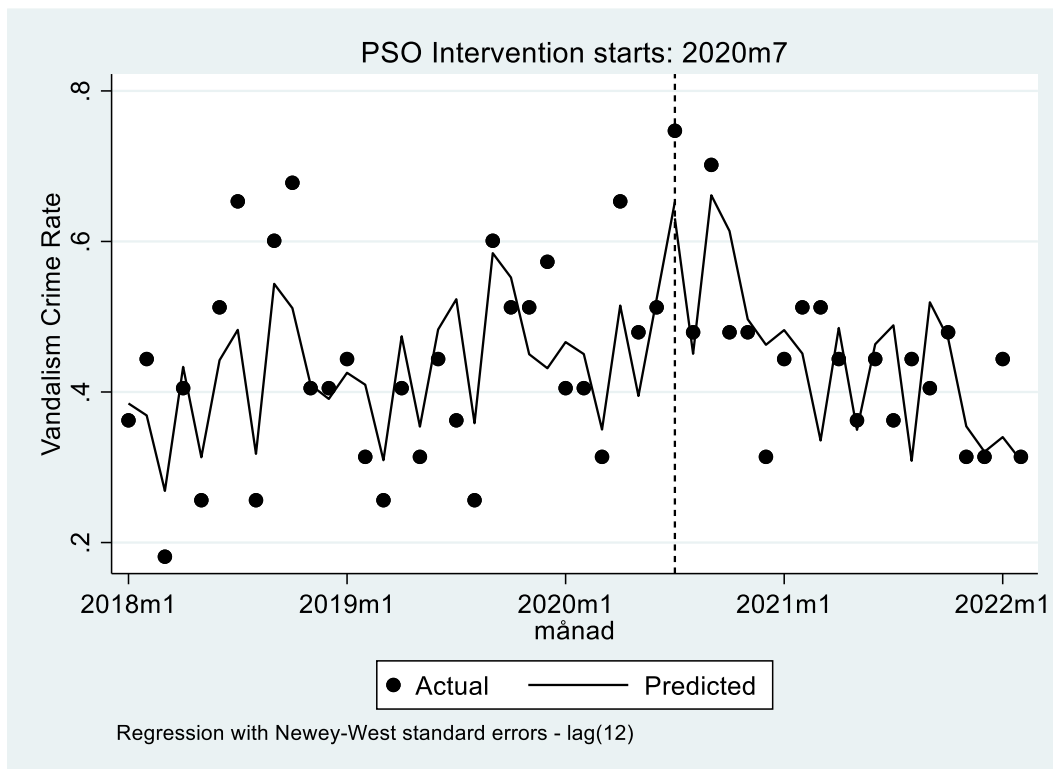
reported crimes per day for the first month (January of 2018). This was followed by an insignificant monthly decrease of -0.001 crimes per day ($P > 0.05$). In the month immediately following the introduction of the intervention there was not a significant difference between the predicted crime rates based on the preintervention (counterfactual) and the PSO intervention ($b = 0.01$, $P > 0.05$). This suggests no immediate treatment effect. There was however a significant difference in trend. In the intervention of the PSO, there was a steeper monthly decrease of -0.015 fewer reported crimes per day ($P < 0.01$), indicating a treatment effect over time. This trend effect was, however, so small that there was no significant difference in predictive crime rates for the last month of the PSO intervention, i.e., February of 2022, ($b = -0.21$, $P > 0.05$). As such, the null hypothesis cannot be rejected.

The next step in my analysis was to investigate if patrolling private security officers has any effect on vandalism. Model 3 in table 5 represents the OLS regression with Newey-west standard errors for Vandalism controlling for autocorrelation up to lag 12. To approximate a normal distribution the dependent variable was transformed to its square root, meaning that the coefficients represent the differences in square-rooted parameters. In short, there was a treatment effect of the intervention.

As shown in the regression table the starting predicted crime rate level of the 4-year period was 0,385 reported crimes per day for the first month (January 2018). This was followed

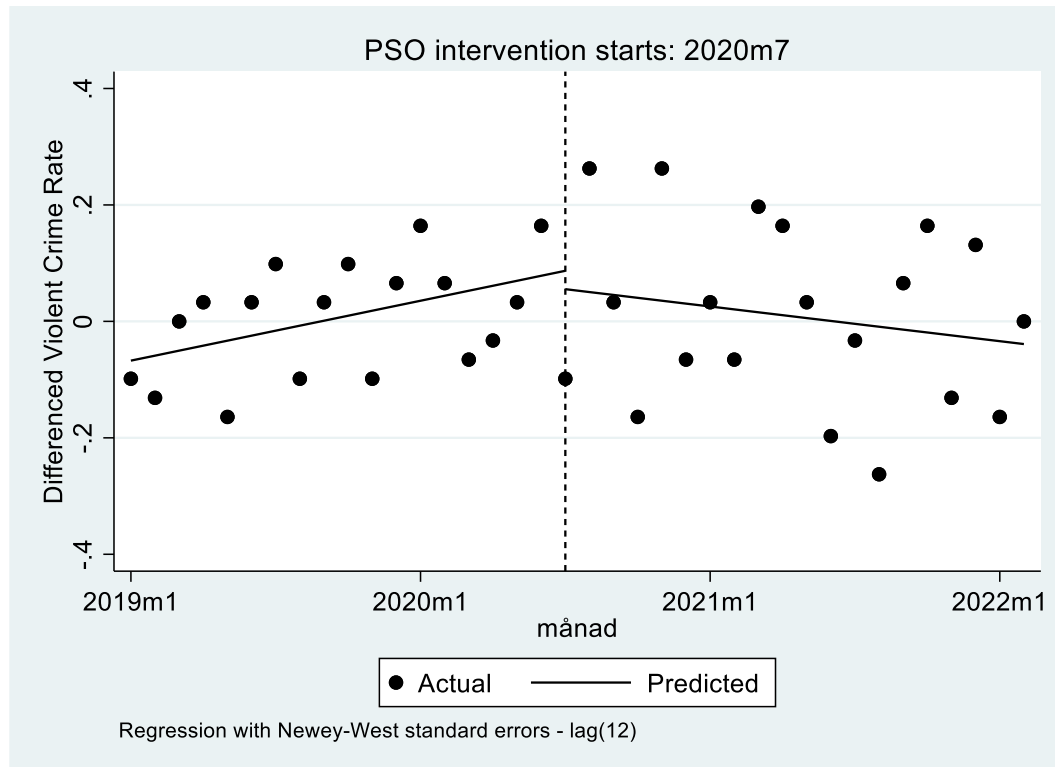
by an insignificant monthly increase of 0.003 crimes per day ($P>0.05$). There was no indication of an immediate treatment effect as the point estimate of the month directly following the introduction of the intervention (July 2020), did not show a significant difference ($b=0.067$, $P>0.05$). There was however a significant difference in trend which indicates a treatment effect over time. In comparison to the phase of the preintervention, the phase of the PSO intervention showed a monthly decrease of -0.015 fewer reported crimes per day than the preintervention ($P<0.01$). The difference in predictive point estimates for the last month of the observed 4-period (February of 2022) shows a significant difference of -0.2 fewer crimes per day for ($P<0.01$), and the differences in predictive point estimates of the PSO-intervention for June 2021 show a significant difference of -0.1 crimes per day less than the preintervention ($P<0.05$). This month was the earliest point in time which displayed a significant difference (other linear combination estimations not included in the regression table). This indicates that it took about 11 months before a treatment effect occurred. As such, the null hypothesis can be rejected. In addition, there seems to exist at least some variation throughout the year in the level of reported crime, as there are some sign differences between the indicators for month. However only in September is the coefficient significant ($b = 0.13$ $P<0.05$), suggesting that the crime rate levels were fairly stable throughout the year.

Figure 3: Monthly square-rooted distribution of reported Vandalism Crime Rate



Model 4 in table 5 represents the OLS regression with Newey-West standard errors for Violent crime, correcting for autocorrelation at lag 12. As the residuals of the original model were not stationary, the dependent variable was transformed into the annual seasonal difference. Consequently, the monthly indicator variable was excluded from the model (see method section) In short, the model did indicate that the intervention did have an effect on reported crime.

Figure 4: Annually differenced distribution of the monthly Violent Crime Rate.



As the regression table shows, there is a small average monthly decreasing trend of 0.067 reported crimes per day⁸ in the observed 4-year period. However, as seen in figure 5 the decrease starts in the phase of the PSO intervention. The phase of the preintervention shows a small significant monthly increasing trend of .009 reported crimes per day ($P < 0.001$). There was no indication of an immediate treatment effect of the PSO intervention ($b = -0.03$, $P > 0.05$). There was however a significant difference in trend between the two phases. The trend of the PSO intervention showed a monthly decrease of 0.01 fewer crimes per day than the trend of the preintervention. This indicates a treatment effect over time. The differences in predictive estimates of crime rate levels between the two phases for February 2022 ($b = -0.29$, $P < 0.001$),

⁸ This is most likely a consequence of that the dependent variable was not stationary, however, the residuals of the model were and as such the assumptions of least squares holds.

June 2021($b=-0.18$, $P<0.001$) and September 2020($b=-0.06$, $P<0.05$) all show negative significant coefficients. This indicates that it took about 2 months for the intervention to show trustworthy treatment effects in levels of reported violent crime. From this basis, the null hypothesis can be rejected. However, as this model showed issues with collinearity, which make it easier to acquire false positives, this result needs to be considered tentatively.

Case 2

Model 1 in table 6 represents the OLS regression with Newey-West standard errors for Acquisitive crime, controlling for autocorrelation up to lag six (see also Figure 5). As shown in table 6, the starting level of the period observed was estimated at 1.4 reported crimes per day, i.e., in January 2018. None of the independent variables showed any significant effects ($P > 0.05$). This indicates that neither the Covid-19 pandemic nor the intervention had any effects on reported crime. As such the null hypothesis cannot be rejected. In addition, for the four-year period, for the conditions of the monthly indicators only July until October have significantly higher monthly crime rates in relationship to January ($P<0.05$), suggesting a small seasonal effect on Acquisitive Crime.

Figure 5: Monthly distribution of Acquisitive Crime Rate.

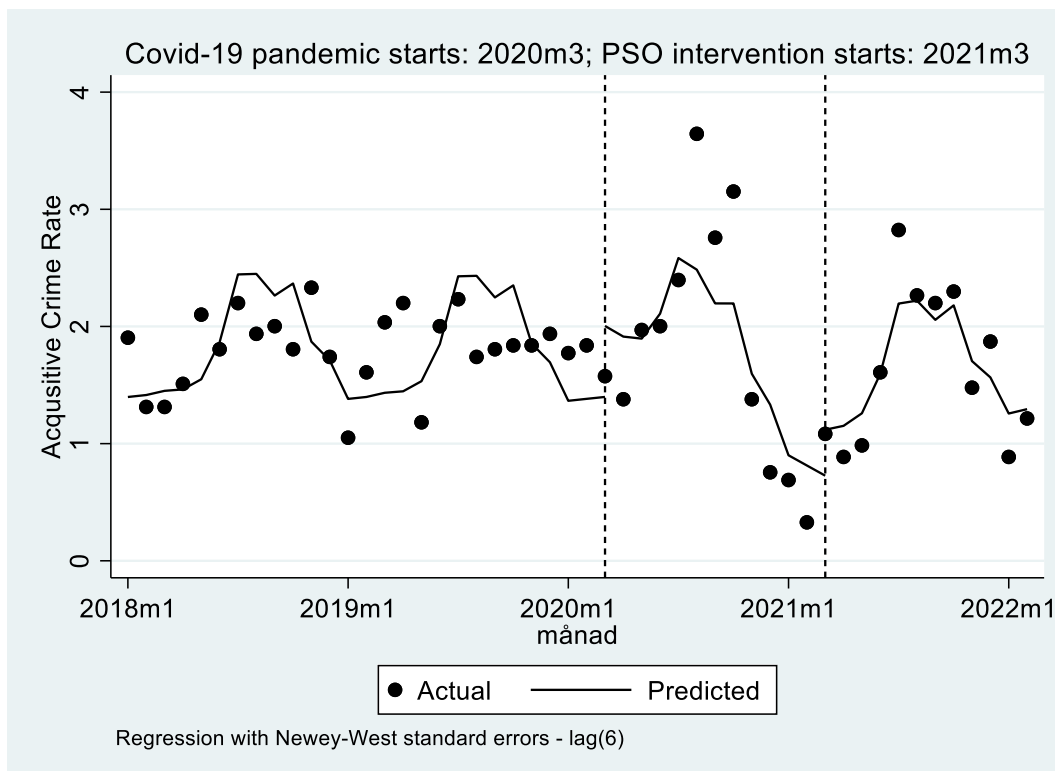


Table 6: Regression table of Case 2

	Model 1 Acquisitive Crime	Model 2 ($^2\sqrt{x}$) Drug Crime	Model 3 D1. Vandalism	Model 4 ($^2\sqrt{x}$) Violent Crime
Pre-intervention trend	-0.00136 (-0.10)	-0.00651* (-2.10)	-0.000388 (-0.04)	0.00644 (2.00)
2020m3 difference: Pandemic vs Pre	0.587 (1.10)	0.261*** (3.70)	0.263 (1.12)	0.203* (2.21)
Trend difference: Pandemic vs Pre	-0.104 (-1.87)	-0.0216* (-2.52)	-0.0534 (-1.92)	-0.0367** (-3.29)
2021m3 difference: PSO vs Pandemic	0.373 (0.78)	0.153 (1.52)	0.594 (1.75)	0.193 (1.28)
Trend difference: PSO vs Pandemic	0.124 (1.81)	0.0328** (3.24)	0.0214 (0.52)	0.0468* (2.65)
2021m3 difference: PSO vs Pre	-0.283 (-0.59)	0.155 (1.67)	0.216 (0.61)	-0.045 (-0.32)
Trend difference: PSO vs Pre	0.021 (0.60)	0.011 (1.03)	-0.032 (-0.89)	0.01 (0.59)
January	0 (.)	0 (.)	0 (.)	0 (.)
February	0.0179 (0.08)	-0.0861 (-1.24)	-0.357 (-1.31)	-0.0995 (-1.04)
Mars	0.0550 (0.12)	-0.217** (-3.44)	-0.308 (-0.86)	-0.0926 (-0.72)
April	0.0689 (0.15)	-0.0608 (-0.49)	-0.0728 (-0.20)	-0.0801 (-0.61)
May	0.157 (0.56)	-0.202* (-2.20)	-0.650 (-1.91)	0.0129 (0.15)
June	0.474 (1.78)	-0.185 (-1.18)	-0.210 (-0.72)	-0.0233 (-0.27)
July	1.054** (3.22)	0.00741 (0.06)	0.116 (0.36)	0.118 (0.92)
August	1.060* (2.08)	0.0572 (0.50)	-0.609 (-1.73)	0.0693 (0.72)

September	0.877* (2.56)	0.00299 (0.05)	0.282 (0.64)	0.0823 (1.01)
October	0.981* (2.18)	-0.0896 (-1.09)	-0.648 (-1.43)	0.0229 (0.20)
November	0.486 (1.78)	0.0555 (0.91)	-0.232 (-0.49)	0.0506 (0.73)
December	0.327 (1.21)	-0.0576 (-0.37)	-0.457 (-1.21)	0.0394 (0.27)
Constant	1.398*** (4.51)	0.899*** (19.28)	0.261 (0.82)	0.611*** (8.42)
Observations	50	50	49	50
F	5.415***	11.64***	1.938	9.460***

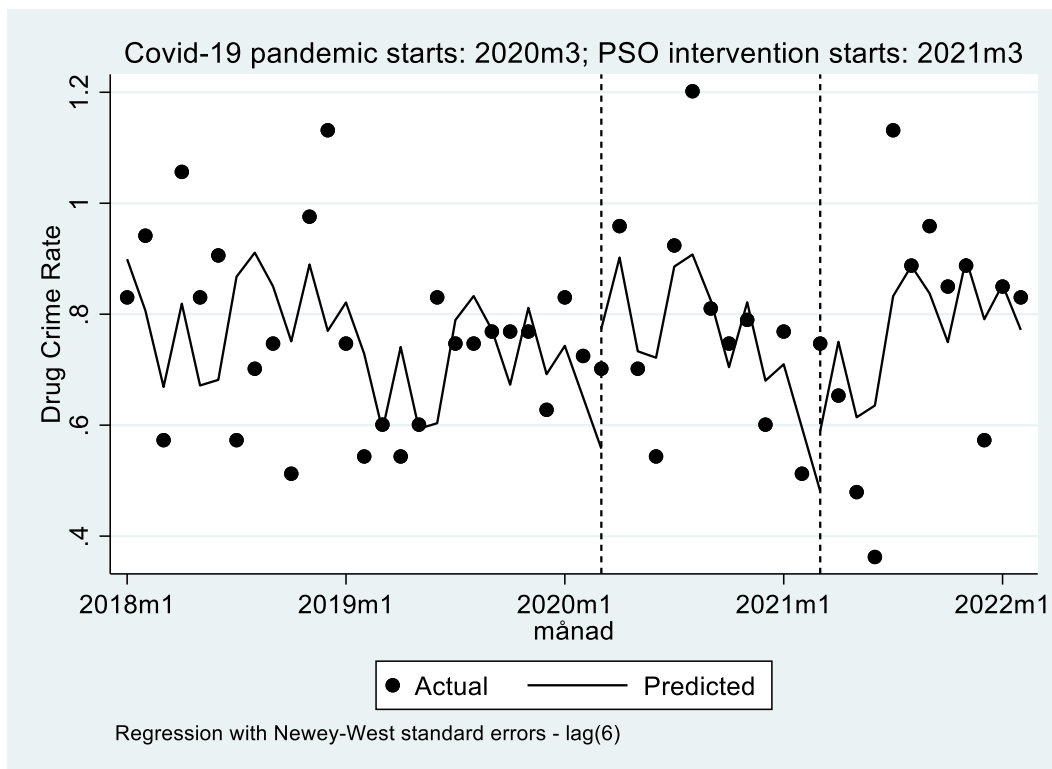
t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Model 2 represents the OLS regression with Newey-West standard errors for Drug-related crimes, controlling for autocorrelation up to lag six (see figure 6). The dependent variable was transformed to its square root to approximate a normal distribution, which the original variable did not have. As such, the coefficients in the regression table represent the difference in unit square root. To summarize, there was no indication that the intervention of patrolling PSOs had any effect on monthly crime rates for Drug-related crimes.

The starting level of the observed four-year period was 0.9 reported crimes per day. This was followed by a very small but significant monthly decrease of .007 crimes per day ($P > 0.05$). Interestingly, there was an immediate positive effect after the “introduction” of the Covid-19 pandemic of .26 crimes per day for Mars 2020 ($b=0.261$, $P > 0.001$) compared to the estimated crime rate based on the pre-intervention phase. In addition, the trend of the phase of the covid-19 pandemic showed a significantly higher monthly decrease of .02 crimes per day in comparison to the trend in the pre-intervention phase ($P < 0.05$). There was no immediate treatment effect of the introduction of the PSO intervention in comparison to the Covid-19 pandemic, as indicated by the insignificant coefficient of “2021m3 difference: PSO vs Pandemic” ($P < 0.05$). There was however a significant difference in the trend between the PSO intervention and the Covid-19 pandemic of a .03 monthly increase per day, suggesting a treatment effect over time. However, in comparison to the estimated crime rates of the pre-intervention phase, there was no significant difference, either in the month of the introduction of the PSO intervention or in the trend between the phases ($P > .05$). As such, this suggests that

Figure 6: Monthly square rooted distribution of reported Drug related Crime Rates.

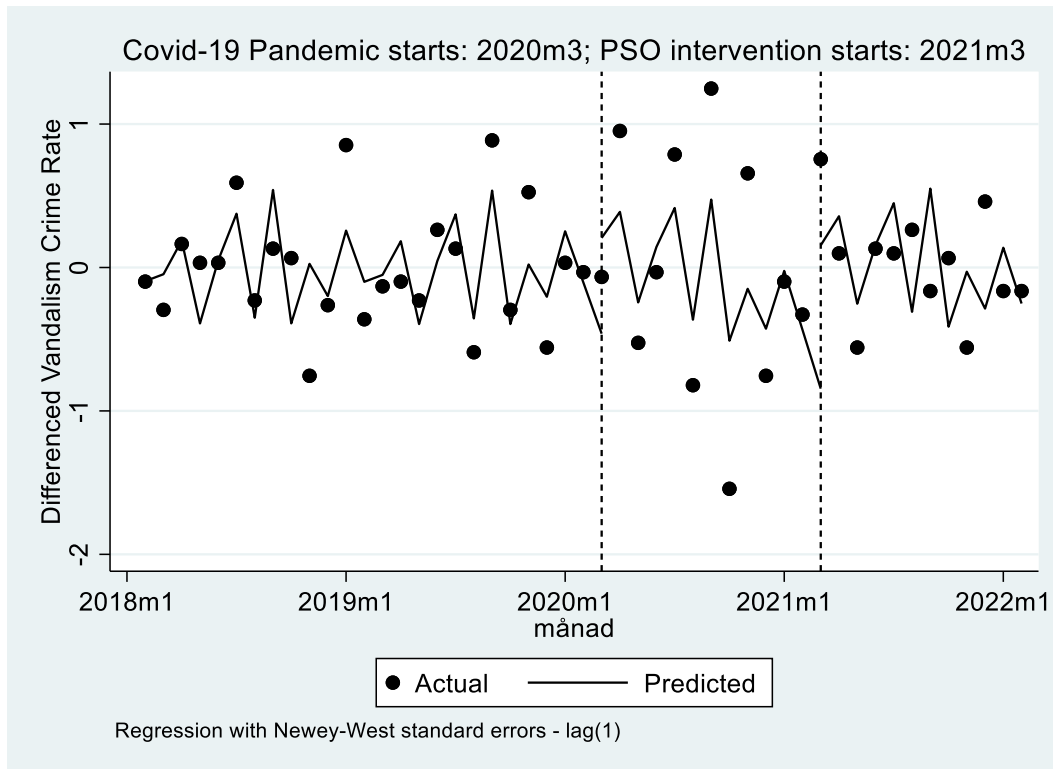


there was no effect on Drug-related crime of the PSO intervention and the null hypothesis cannot be rejected. In addition, for the four-year period observed, crime rates seemed to be fairly stable throughout the year as only Mars ($b = -0.22$, $P < 0.01$) and May ($b = -0.2$, $P < 0.05$) showed significant negative relations to the month of January.

Model 3 represents the OLS regression with Newey-West standard errors for Vandalism, controlling for autoregression at lag one (see also Figure 7). The dependent variable was transformed to the first-order difference to remedy the non-stationarity of the residuals of the original model. This means that every observation represents the difference between the second and first observation, consecutively. Additionally, this also means that the constant term of the model represents the trend of the whole period modelled, and not the estimated starting level. All in all, there was no evidence to support that the intervention had any effect on reported Vandalism.

As shown in the regression table above (Table 6), the F-statistic and all coefficients are insignificant. This indicates that the model was as competent to explain the variance in the dependent variable as a model without any predictor variables. As such, the null hypothesis cannot be rejected.

Figure 7: Monthly differenced distribution of reported Vandalism Crime Rates.

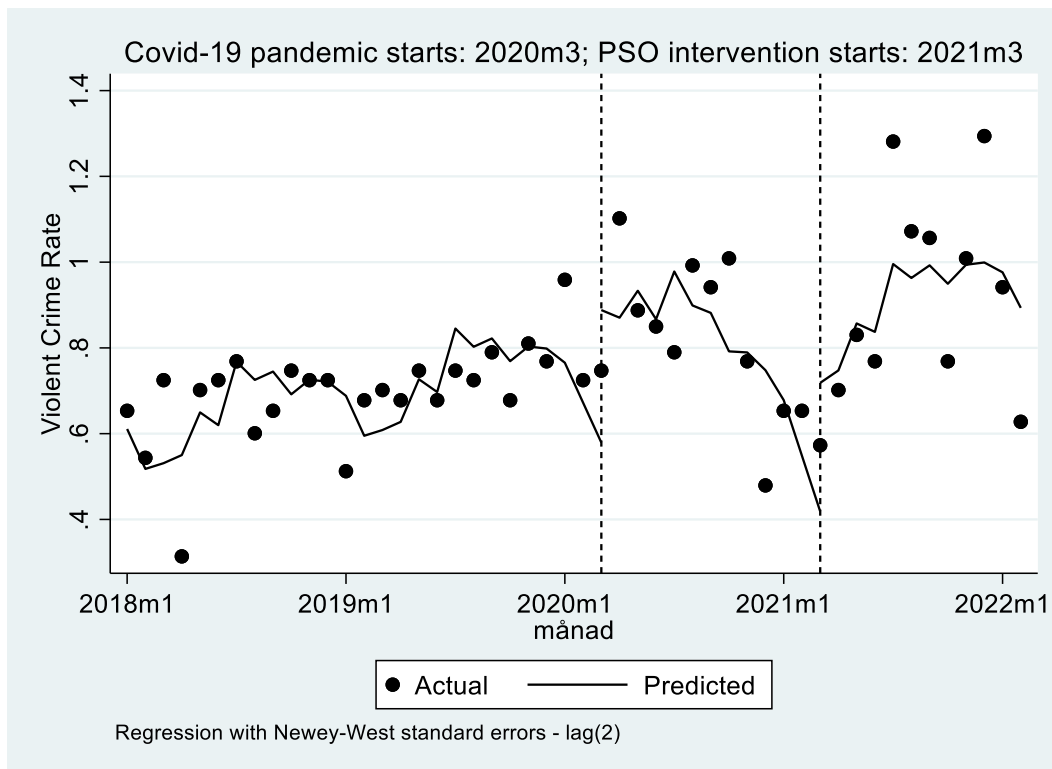


Model 4 in table 6 represents the OLS regression with Newey-West standard errors for Violent crime, controlling for autocorrelation at lag 2 (see also Figure 8). The dependent variable was transformed to its square root to approximate a normal distribution of the residuals. As such the coefficient represent a 1-unit square root change. To summarize the following paragraph, there was no evidence to support that the intervention had any effect on reported violent crime.

As shown in the regression table above, the starting level of the observed four-year period was estimated at 0.61 crimes per day ($P < 0.001$) This was followed by an insignificant positive trend in the pre-intervention period ($b = 0.006$, $P > 0.05$). Interestingly, there was a significant difference between the estimated crime rate for the month of “introduction” of the Covid-19 pandemic and the predicted crime rate based on the pre-intervention phase ($b = 0.2$, $P < 0.05$) suggesting an immediate treatment effect of the Covid-19 pandemic. There is also a significant difference in trends between the phases, with the trend of the phase of Covid-19 showing a higher monthly decrease of .04 fewer crimes per day ($P < 0.01$). The difference between the estimated crime rate of the month of introduction of the PSO intervention is insignificant ($P > 0.05$) suggesting that there was no immediate treatment effect. However, there was a difference in trend between the phases. The intervention of the PSOs showed a monthly increase of .05 crimes per day in comparison to the trend of the Covid-19 pandemic. In

comparison to the phase of the pre-intervention, there was no significant difference in the predicted crime rates for the month of the start of the PSO intervention and no difference between trends either. As such, the null hypothesis cannot be rejected, indicating that the PSO intervention did not have any effect on levels of reported violent crime. In addition, none of the indicators of month showed any significant differences in relation to the month of January, indicating that the levels of reported crime were fairly stable throughout the year.

Figure 8: Monthly square-rooted distribution of reported Violent crime Rates.



Case-by-case summation

In both cases, crime was represented as the main problem. Hence, the main function of the PSOs within the confines of §3 was to reduce crime. The crime types of importance in both cases were 'Acquisitive Crime', 'Drug Related Crimes', 'Vandalism', and 'Violent Crime'. However only models 3 (Vandalism) and 4 (Violent crime) in Case 1 showed significant reductions in reported crime. This means that the PSOs patrolling public spaces were ineffective at remedying the conditions they were intended to address in Case 2, and in Case 1, only the second and third most pressing conditions. From this basis, private security officers on hot spot patrol within the confines of §3 only have a conditional deterrent effect, i.e., conditional on crime type and place of Hot-spot. Now, one of the strengths of the multiple-case

methodology, is that differences in results must be attributed to the differences between Cases. The potential importance of these differences will be covered, discussed and situated with the context of the reviewed scientific literature and theory in the next chapter.

Discussion and Conclusion

Through a sequential mix method, multiple case approach, the results of this thesis have shown what the problems private security officers patrolling public places are, and to what extent the intervention works. Furthermore, my thesis has considered the effects of the interventions on the condition they were intended to address, by its customers and regulators. By doing so, my thesis has extended the knowledge of if private security officers patrolling public spaces work within the confines of §3, a subject where research has been very scarce. This chapter provides a reflection and a discussion of the research process, the limitations and the consequences of the design, the implication of the results and the interpretation, and ends with the conclusion and suggestions for further research.

In summary, my analysis showed that the main function of the private security officers within the confines of §3 was to reduce high levels of crime, and through its reduction, the public's fear and worries as well as the disturbances to order. Now, to the inquiry of what extent the intervention works, my quantitative analysis suggested a conditional answer: it depends on crime type and place. In both cases, the crime types of importance were Acquisitive Crime, Drug-related Crimes, Vandalism, and Violent crime. However, only models 3 (Vandalism) and 4 (Violent crime) in Case 1 showed significant reductions in reported crime. The rest of the models in both cases all provided insignificant results.

It is fairly surprising that all crime types within Case 2 showed insignificant results in comparison to the pre-intervention phase preceding the Covid-19 pandemic, while two models in Case 1 showed significant reductions. Theoretically, this would mean that the PSOs were able to reduce opportunities and deter individuals with a disposition for Vandalism and Violence in one Case but not the other, and similarly, only for those two crime types. In consideration of the physical characteristics of place, Case 1 covered an area half as large as that of Case 2 (see appendix A) but was at the same time more dispersedly distributed, i.e., a smaller areal but a larger circumference. In addition, Case 1 has a lot more open space in comparison to Case 2, which provides more visibility of the PSOs as it does of potential offenders. As such, it is possible that the relatively more densely up-built area in Case 2, impeded the functions of opportunity reduction through deterrence, by impeding visibility. At

the same time, this being the situation, why the other models in Case 1 did not show significant reductions in reported crime is rather perplexing. Particularly since the models in Case 1 could not account for the effect of the Covid-19 pandemic and the restrictions thereof. As Case 1 contains one of Gothenburg's largest public transport junctures it is possible that the pandemic and the restrictions would drastically reduce the number of individuals within the site. As such, the number of targets for acquisitive crime, as well as for violent crime, would also be reduced, and consequently, fewer reported instances of crime. This is probably not the case for Drug-related crimes and Vandalism as those crime types do not have a direct human victim in that sense. However, fewer people mean more visibility and as such, pose a higher risk of detection and apprehension, which should deter criminal activity further.

From this position of surprise that not all models in Case 1 showed significant reductions, it also brings into question the validity of the significant reductions of Vandalism and Violent Crime. In consideration that Case 2 showed a significant trend of crime reduction for Violent crime during the first year of the pandemic, in conjunction with the issues of multicollinearity of the Violent Crime model in Case 1, it is fairly possible that this result is invalid. Similarly, as the Vandalism model of Case 1 depicted a fairly weak decreasing trend - i.e., it took about a year before levels were significantly lower than they would have been if the intervention was not implemented – it is possible that this result is also invalid. As such, the two significant results should be considered very tentatively.

In general, then, my results and interpretation indicate that private security officers on hot spot patrol did not 'work'. This is in line with the two previous effect evaluations of private security officers on hot spot patrol within the confines of §3 (see Frogner et al., 2013; Jonsson 2019). Considering that studies of Hot-spot policing interventions have during the past three decades generally shown to be an effective crime prevention measure against Violent, Property, Disorder, and Drug crimes (Braga et al., 2019), it begs the question of why does the intervention of PSOs on hot-spot patrol not seem to work in Sweden? The natural intercession is that PSOs are not police officers as such, and while interventions of private security in public places have shown decreases in victims as well as higher detection of crime in the UK, the scientific literature on the subject is slim (Ariel et al., 2017). The difference between PSOs and police officers boils down to powers and public perceptions thereof. Particularly, through the lens of Nagin and colleagues' (2015) deterrence-based model, the power and act of apprehension. According to my argument, PSOs have this power by proxy, through their close ties with the police officers and authority. However, it is likely then, that the function of deterrence of this activity is dependent on the effectiveness of the response by the police officers to the calls of

the PSOs. It's outside the bounds of this thesis to comment on the process thereof, but considering my results, in the context of the scientific literature reviewed, rigorous process evaluations are elementary to approach the research question posed above. Considering perspectives such as if the PSOs are directing patrol on hot-spot in terms of micro-places, how long they stay at a specific hot spot and at what times, which are important factors within the hot spot policing literature (Telep et al 2012; Frogner et al 2013; Rosenfeld et al., 2014; Ariel et al 2016; Williams & Coupe, 2017; see Lum and Koper 2017: 71-72) In addition, how effective police are to respond to calls of the PSOs after detaining an individual at the site.

Limitations

One obvious limitation of this thesis' design and framework is that it did not consider the process of implementation of the §3 interventions considered. Indeed, a very helpful perspective in contextualizing the results, it was too large of an endeavour to conduct. However, I argue the approach of this thesis was still sufficient to consider the research question posed. A more prominent limitation is the confounding factor of the Covid-19 pandemic and the restrictions thereof. I was able to at least consider the effect within the models of case 2, which were in all models but one insignificant. However, the Covid-19 pandemic was still in effect during the intervention phase of both cases. As such, it is difficult to assess to what extent it confounded the results if at all. Be that as it may, considering that the results are in large harmonious with the previous effect evaluations of §3 (Frogner et al 2013; Jonsson 2019), in which the pandemic was not a present issue, the design of my thesis did still provide an answer to the research question posed. Another limitation that deserves to be addressed is the fact that this thesis did not consider the effect on the public's fears and worries, i.e., the public's perception of safety. Even if my thesis has shown that the main function of PSOs within the confines of §3 is to reduce crime, and through it, reduce the public's fears and worries, an effect evaluation considering both problems would have been preferable. This would have been too large of an assignment within the time frame of this thesis. However, considering that the main problem was high levels of crime, I argue that my approach did satisfy the conditions of my examination.

Concluding remarks

The aim of this thesis was to gain knowledge of the extent private security officers patrolling public spaces 'work' and the main research question permeating my approach was why was the intervention implemented, i.e., what problems were the intervention supposed to remedy,

and to what extent did it work. My sequential mixed method, multiple case design has shown that the problems PSOs were supposed to remedy were respectively crime, the public's fear and worries, and disturbances to order. Importantly, my qualitative analyses showed that the main function was to reduce crime and through its reduction, reduce the public's fear and worries and the disturbances to order. To my knowledge, no other study has considered how the §3 intervention is represented to function. This being the case, I applied one of the most rigorous quasi-experimental methods of quantitative analyses, examining to what extent PSOs were able to reduce crime of the crime types of importance for the customers and regulators of the intervention. In general, these results indicated that the interventions did not work. Only two models in one case provided significant reductions. However, these models did not account for the Covid-19 pandemic and one had issues with multicollinearity, questioning the validity of those results. Again, to my knowledge, there is no effect evaluation which has studied two cases, or for that matter one, of §3 areas situated in the inner-city of one of the largest cities in Sweden. I offer two main interpretations: (i) The two significant results are valid and the physical characteristics of place and crime type are important considerations when devising a § 3 intervention. (ii) The two significant results are invalid and the §3 intervention is ineffective in reducing crime. The latter interpretation of the results provides confirmation of the results of the previous evaluations of PSOs within the confines of §3 (Frogner et al 2013; Jonsson, 2019). Regardless, in consideration of the rich literature on hot spot policing and its widely documented effects in reducing crime, I would highly recommend rigorous process evaluations in conjunction with effect evaluations be conducted to identify why in large it does not seem to work in Sweden. Preferably, with a cost-benefit analysis, since the private security industry concerning public places is a growing market, funded in large by the taxpayers.

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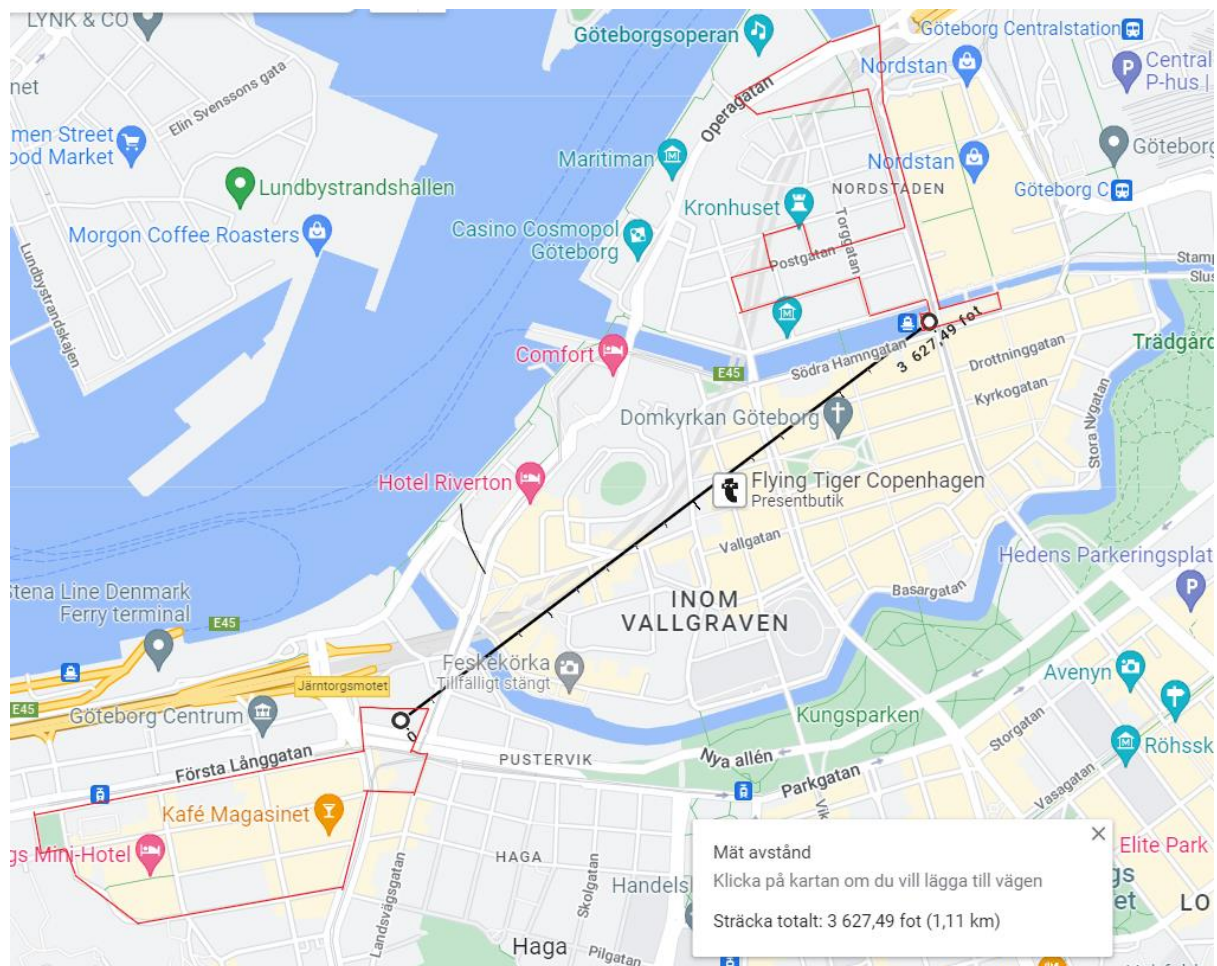
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Appendix A

Geometric information concerning the Cases

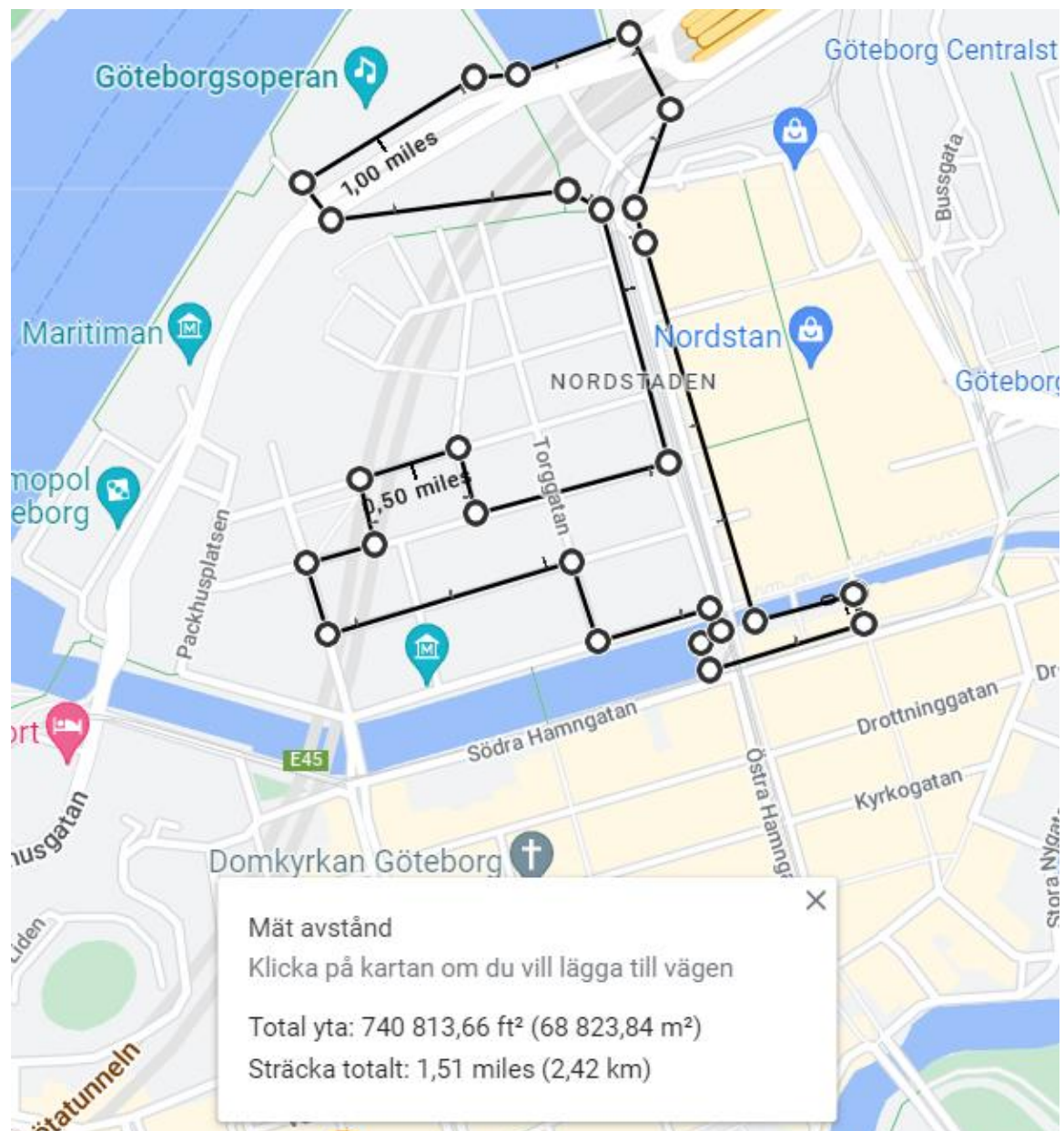
The geometric information was acquired from the automatic calculations within Google Maps. The delamination of the two Cases in google maps were made by me following the information in the attached images from the permits and the descriptions of the sites from the municipal's applications. As such, there might exist some small deviations from the actual geometric measures. Consequently, the geometric information presented should be considered approximate.

Figure 1: Distance between the two Cases



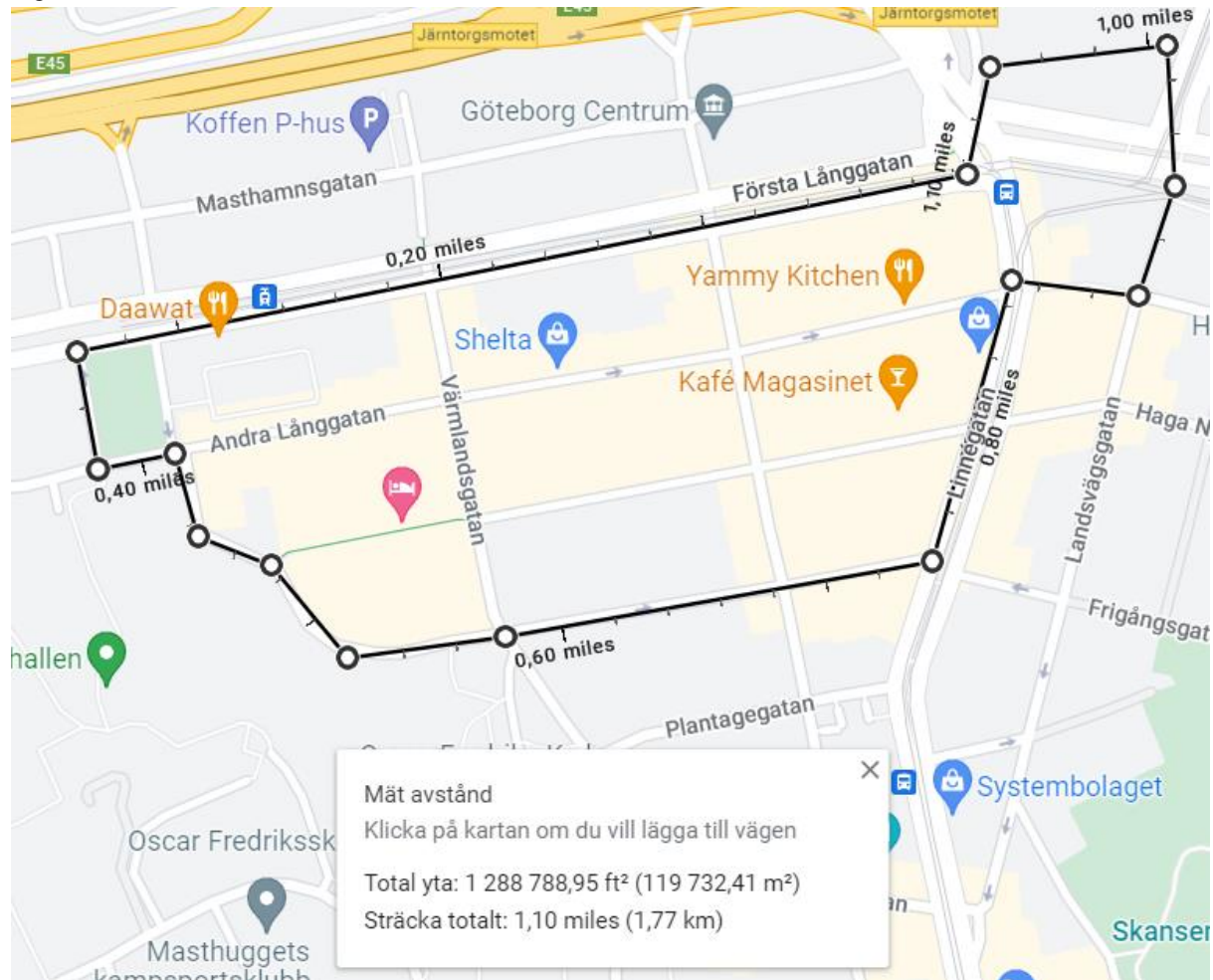
Depiction: Case 1 in the upper right corner. Case 2 in the lower left. The black line between the cases represents the distance between them. Total distance: 3 627,49 feet (1,11 km)

Figure 2: Geometrical information of Case 1



Translation of geometrical information. Total areal: 740 813,66 ft² (68 823,84 m²). Total distance (circumference): 1,51 miles (2,42 km)

Figure 3: Geometrical information of Case 2



Translation of geometrical information. Total areal: 1 288 788,95 ft² (119 732,41 m²).
Total distance (circumference): 1,10 miles (1,77 km)

Appendix B

Distributions of reported crime raw data by month

Case 1

Figure 1: Distribution of Acquisitive Crime

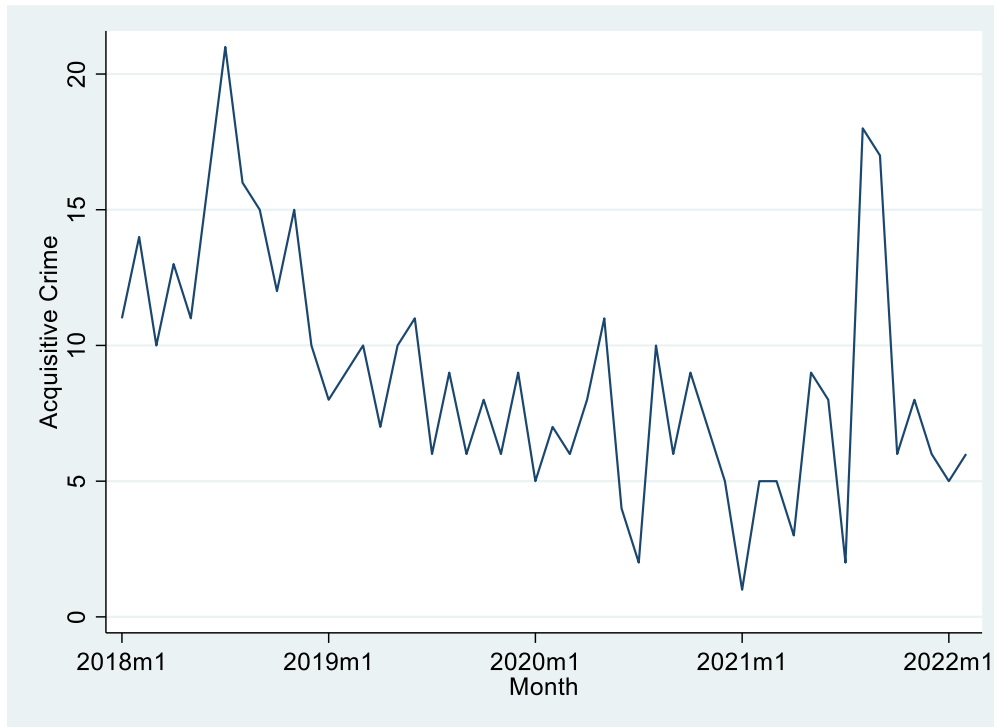


Figure 2: Distribution of Drug Crime

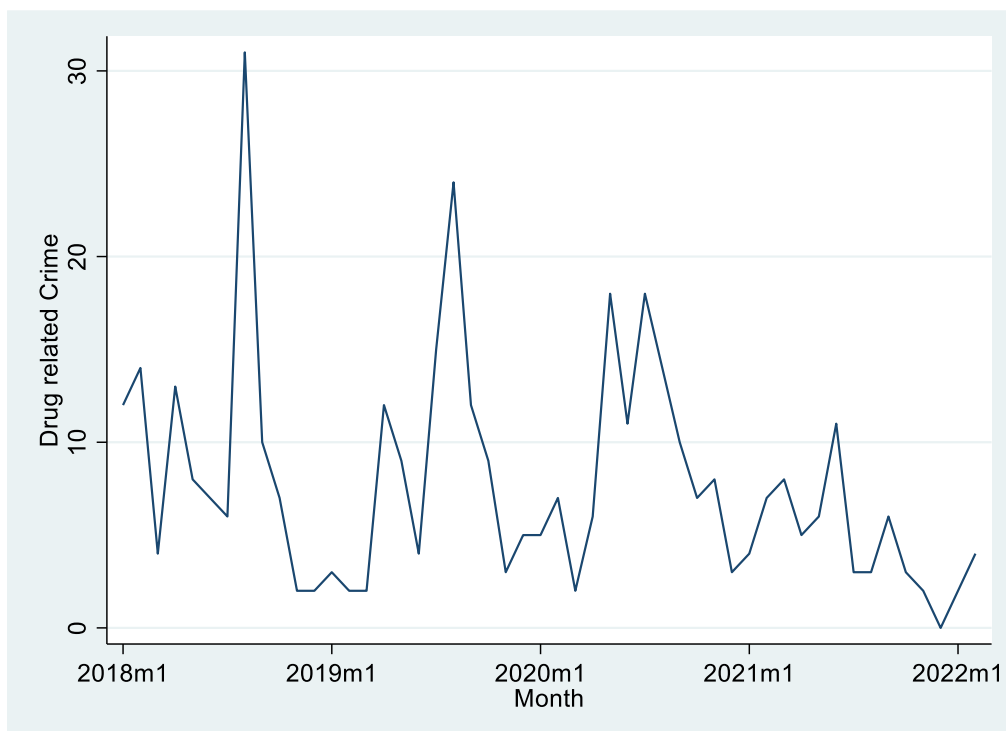


Figure 3: Distribution of Vandalism Crime

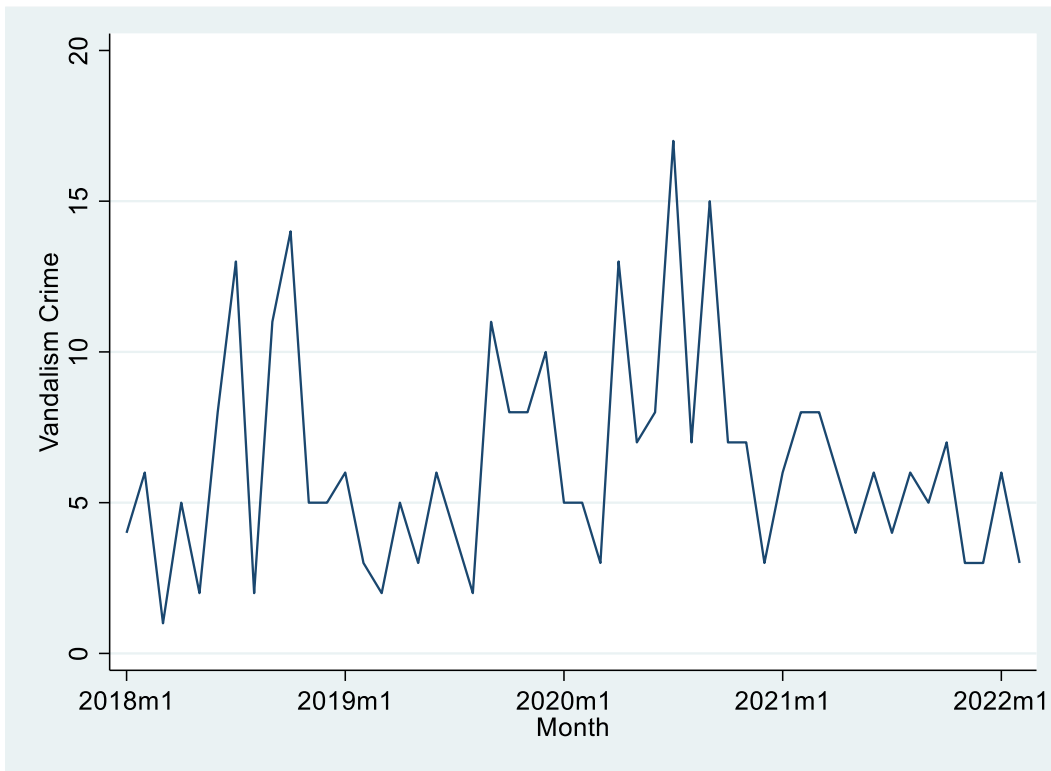
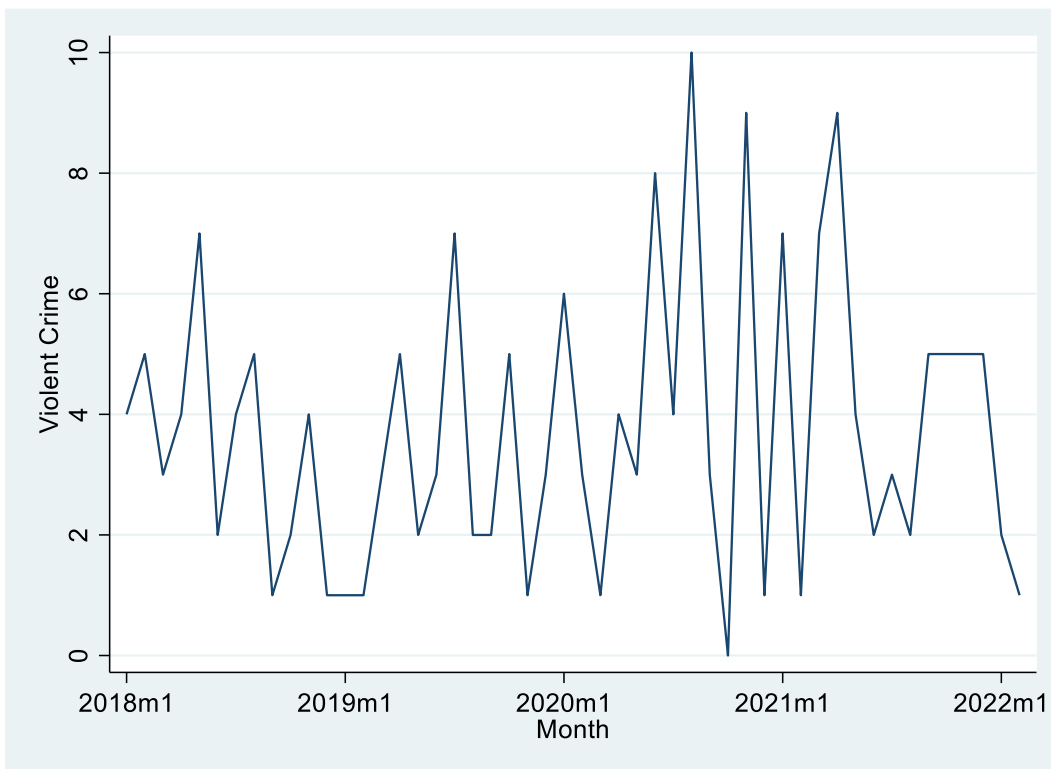


Figure 4: Distribution of Violent Crime



Case 2

Figure 5: Distribution of Acquisitive Crime

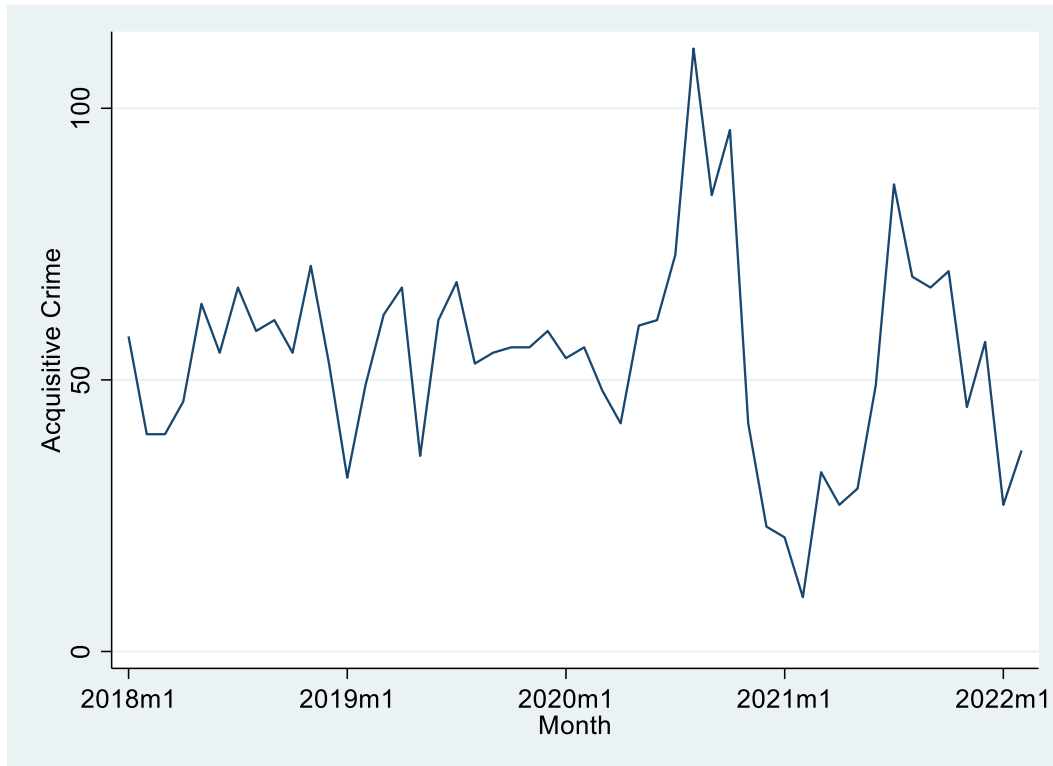


Figure 6: Distribution of Drug Crime

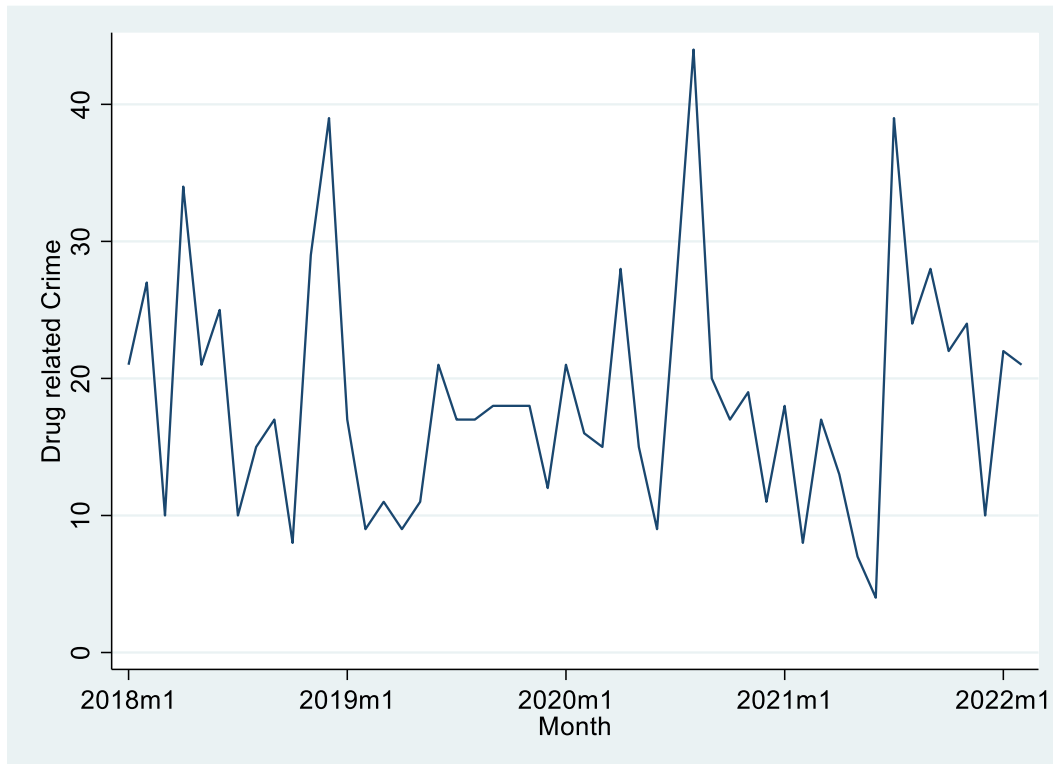


Figure 7: Distribution of Vandalism Crime

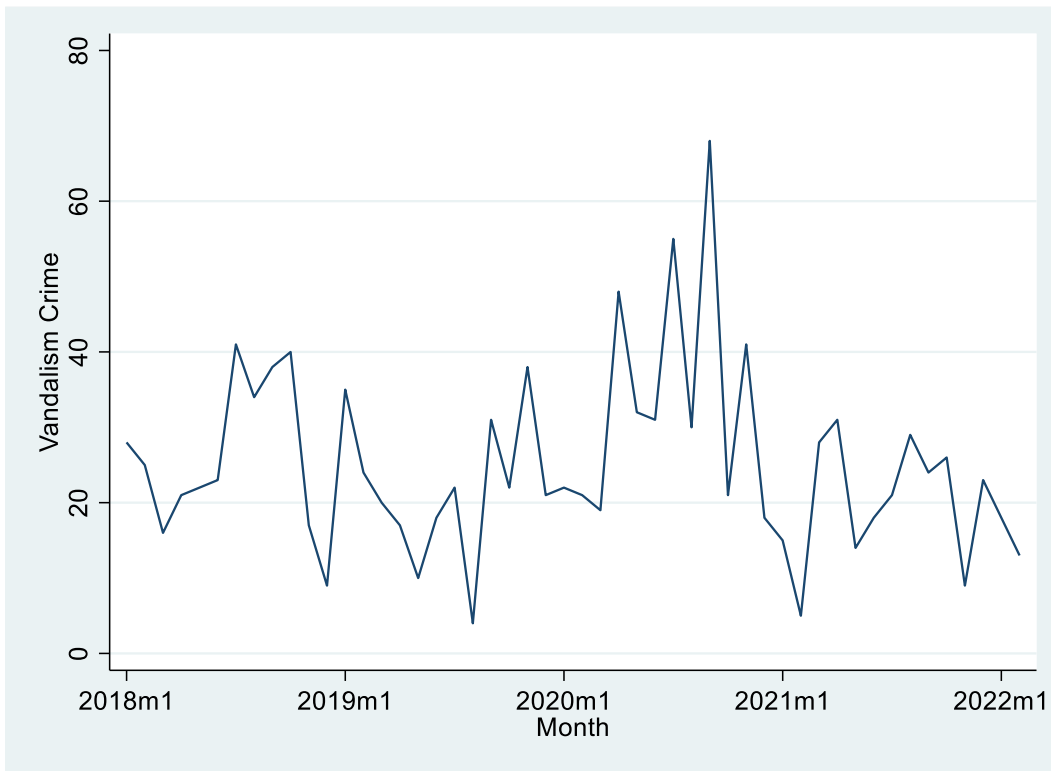


Figure 8: Distribution of Violent Crime

